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ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 242

DATE: Tuesday, October 9, 1990

BEFORE:

A. KOVEN Chairman

E. MARTEL Member



FARR
ASSOCIATES &
REPORTING INC.

(416) 482-3277

2300 Yonge St., Suite 709, Toronto, Canada M4P 1E4

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the
Honourable Jim Bradley, Minister of the
Environment, requiring the Environmental
Assessment Board to hold a hearing with
respect to a Class Environmental
Assessment (No. NR-AA-30) of an
undertaking by the Ministry of Natural
Resources for the activity of timber
management on Crown Lands in Ontario.

Hearing held at the offices of the Ontario
Highway Transport Commission, Britannica
Building, 151 Bloor Street West, 10th Floor,
Toronto, Ontario, on Tuesday, October 9, 1990,
commencing at 9:00 a.m.

VOLUME 242

BEFORE:

MRS. ANNE KOVEN
MR. ELIE MARTEL

Chairman
Member



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I N D E X O F P R O C E E D I N G S

Witness:

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Continued Direct Examination by Ms. Swenarchuk	43482
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I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
1416	Five Page excerpt of conditions 1 through 5 of FFT's November 28th draft terms and conditions re: silvicultural prescriptions	43512
1417	One page letter with a distribution list from the Director of the EA Branch to Mr. Quinn in response to a question raised during the Board's satellite hearing in Timmins.	43632

1 ---Upon commencing at 10:35 p.m.

2 MADAM CHAIR: Good morning. Please be
3 seated.

4 Good morning, Ms. Swenarchuk.

5 MS. SWENARCHUK: Good morning, Madam
6 Chair, Mr. Martel.

7 When we ended last week I had been
8 beginning to ask Dr. Hutchinson some questions about
9 natural and artificial monocultures and an objection
10 was taken to that by Mr. Freidin and Mr. Cassidy with
11 regard to Dr. Hutchinson's reference to questions of
12 genetics in his answer and I want to review with him
13 initially his qualifications to refer to questions of
14 forest genetics.

15 Before I do that, I would like to recall
16 for the Board that testimony has been led by the
17 Ministry of Natural Resources with regard to questions
18 of genetic diversity and that evidence was led in MNR
19 Panel 10 and can be found in Volume I of that two-panel
20 witness statement, Exhibit 416A, from pages 255 to 267
21 and the author of that section was Mr. Greenwood and no
22 objection was taken by any party at that time to Mr.
23 Greenwood's expressing views on forest genetics, and
24 I'm not taking any objection now or intending any
25 disrespect to Mr. Greenwood.

1 I would, however, like to recall for your
2 attention Mr. Greenwood's CV. Mr. Greenwood has a
3 Bachelor of Science Degree from the University of
4 Toronto Faculty of Forestry in 1975 and, in addition,
5 audited one course in 1977 on computer matters.

6 The CV lists no refereed publications,
7 three unrefereed proceedings/publications.

8 TOM HUTCHINSON, Resumed

9 CONTINUED DIRECT EXAMINATION BY MS. SWENARCHUK:

10 Q. I will ask Dr. Hutchinson now to --
11 if you would refer to your CV, Dr. Hutchinson, and
12 indicate for the Board, please, what your experience
13 has been with regard to forest genetics, plant genetics
14 in general?

15 A. Plant genetics.

16 MS. SWENARCHUK: And the CV, Madam Chair,
17 is Exhibit 1407.

18 MADAM CHAIR: That was a separate -- yes,
19 we have got it. Thank you.

20 MR. HUTCHINSON: Well, I think I'm
21 familiar with population genetics. My Ph.D dealt with
22 the comparison of populations from a genetic and
23 physiological point of view and how they respond to
24 different soil types.

25 It was not on a tree species, but it

1 dealt with those principles and I've had obviously
2 quite a lot of training in the plant ecology, forest
3 ecology, botany which includes as part of that
4 package -- it includes courses in plant genetics.

5 So those were courses I took in the U.K.
6 and I'm on various student advisory committees for the
7 forest faculty which Professor Zsuffa's students --

8 Q. Could you spell that name for the
9 reporter, please?

10 A. That's a difficult one. Z-s-u-f-f-a.

11 Q. Thank you.

12 A. Professor Zsuffa is a forest
13 geneticist in the Faculty of forestry at the University
14 of Toronto.

15 I've had NSERC grants dealing with
16 aspects of genetics.

17 Q. Excuse me, Dr. Hutchinson, that's
18 NSECR?

19 A. That's the National Science...

20 MADAM CHAIR: And engineering.

21 MR. HUTCHINSON: A. Thank you.

22 Engineering and Research Council. Some of those grants
23 are recent ones. I was principal investigator. One is
24 on page 9 of my CV. NSERC, strategic -- right at the
25 bottom there.

1 MS. SWENARCHUK: Q. No. 19; is it not?

2 A. Molecular cloning of metal tolerant
3 genes from polluted areas, and that's a joint one with
4 two other colleagues in the botany department.

5 Q. And that has to do with questions of
6 genetics, Dr. Hutchinson?

7 A. Yes, that's a direct investigation
8 into the ability to transfer genetic material from one
9 organism to other.

10 Q. Okay. Could I refer you to -- before
11 we go on to page 8 of your CV, I understand paragraph
12 (n), that reference has some relevance here. Could you
13 explain that?

14 A. Yes, that's the sort of research
15 that's developed from that NSERC strategic grants. So
16 those cross reference the two.

17 Q. Okay. And what exactly is it, Dr.
18 Hutchinson?

19 A. What is it? Well, it's an attempt to
20 look at the mechanism, the genetic mechanism by which
21 information concerning metal tolerance; that is, the
22 ability to tolerate very high levels of metals in soil
23 solution, in some Sudbury area plants is transmitted.
24 We are interested there in how it has evolved so very
25 rapidly. We believe there is some rather unique

1 genetic components to that process itself.

2 Q. All right. I believe you had a
3 reference as well on page 19 of your CV, the sixth
4 reference from the bottom, Hutchinson 1967?

5 A. That relates to my Ph.D thesis and
6 that paper is an examinatin of population variability,
7 and how that relates to environmental, if you like
8 occupation of sites. I teach -- I thought a course on
9 variation in ecology at the University of Toronto.

10 Q. And do you not also teach lectures on
11 plant defenses to insect attack?

12 A. That's part of the plant ecology
13 course. Yes, I teach those lectures.

14 Q. Now, the questions that we were
15 discussing when this objection arose --

16 MR. CASSIDY: Madam Chair, I still have
17 some concerns about this and about this witness'
18 ability to give evidence in this field.

19 She has canvassed some of this and
20 brought out some of the things that she thinks support
21 his ability to give evidence on this, and I'm referring
22 to the evidence of genetic monocultures in the forest
23 because that's what I understand he is going to
24 evidence about, but I still have some concerns about it
25 and it may be appropriate for me to ask a few questions

1 of this witness right now in respect of his
2 qualifications and then I can determine whether or not
3 I have any further objections before he gives the
4 evidence.

5 It is a question of whether or not in
6 fact he can give the evidence.

7 MS. SWENARCHUK: Well, Madam Chair --

8 MADAM CHAIR: Well, Mr. Cassidy, I think
9 the Board has also gone through Dr. Hutchinson's CV and
10 we have looked at the evidence he has given us so far
11 and we understand that you will have objections and
12 that you will be cross-examining Dr. Hutchinson and
13 going to his credibility as a witness.

14 The Board is interested in hearing what
15 Dr. Hutchinson says and, as you know, we will put the
16 weight that we think his evidence merits. I don't know
17 what the point is of you examining your objections to
18 his credibility as a witness now when you are going to
19 do that anyway during your cross-examination.

20 MR. CASSIDY: No, Madam Chair, to make
21 the point simply, it's a question of the admissibility
22 of this evidence as opposed to his weight or
23 credibility, which is what we were talking about the
24 other day and which is what I understand you have just
25 indicated.

1 I have some concerns about whether or not
2 it's even admissible. You have to be an expert witness
3 before your opinions are admitted as evidence and then
4 you get into the questions of weight or credibility of
5 it, which is what we are going to examine with respect
6 to the other holus bolus amount of his evidence.

7 I have some very real concerns about
8 whether this evidence we are even hearing or going to
9 hear should be admitted as opposed to the weight that
10 should be given to it. As a result, I have some
11 questions about that with respect to this.

12 Now, I may be satisfied in terms of after
13 hearing my questions answered and then suggest to you
14 that, all right, we then hear the evidence and I will
15 cross-examine with respect to its weight. My question
16 is with respect to its admissibility at this point.

17 MADAM CHAIR: Well, Mr. Cassidy, Mr.
18 Martel and I think that Mr. Swenarchuk's point is well
19 taken and that is, we have heard from dozens and dozens
20 of witnesses, some who haven't academic qualifications,
21 some who have had various experience in the field,
22 others who have given us opinions simply because during
23 the course of their evidence something interesting
24 arose and they were asked about it.

25 I don't see how -- what is going to be

1 your point that this evidence isn't admissible?

2 MR. MARTEL: What's the witness' test
3 going to be that he is not credible?

4 MR. CASSIDY: Well, you are asking me now
5 to state what my questions in cross-examination of this
6 witness will be and the questions will be directed at
7 showing that he has not done any studies in forest
8 genetics.

9 He has done studies in plant genetics
10 based on what I heard, but I am concerned that there
11 may not be a cross-over between the two.

12 I have your comments, Madam Chair. I am
13 noting my objection for the record and if your
14 indication is that you don't want wish to proceed in
15 that fashion, so be it, but I would like my objection
16 noted for the record.

17 MADAM CHAIR: We certainly note your
18 objection, Mr. Cassidy, and we think that you can
19 revisit this in your cross-examination.

20 We expect that your question is very
21 short and it's not going to take a lot of time to
22 investigate with this witness about the genetics and
23 monoculture?

24 MS. SWENARCHUK: That's correct.

25 MADAM CHAIR: That is specifically what

1 Mr. Cassidy was objecting to.

2 MS. SWENARCHUK: Could I just indicate
3 further, one would have to assume, if Mr. Cassidy is
4 going to pursue this objection with regard to Dr.
5 Hutchinson either now or later, that he must be taken
6 to object to Mr. Greenwood's qualifications to say
7 anything about forest genetics and I would expect to
- 8 hear that objection as part of his objection.

9 Furthermore, clearly I think we all know,
10 we don't need to be experts to know that trees are
11 plants. If the man has done work in plant genetics,
12 surely it defies logic to suggest that there is no
13 relationship between that and forest trees.

14 MR. CASSIDY: Two comments. One, I don't
15 think you can make -- counsel can make a statement such
16 as she just has in terms of defying logic. That's a
17 matter of argument after hearing evidence from expert
18 witnesses.

19 Secondly, it is simply irrelevant as to
20 whether or not I made an objection to another witness
21 being qualified as an expert and I was, therefore,
22 foreclosure in objecting to this witness. You deal
23 with each witness individually and, for whatever
24 reason, you make your objections and it just simply is
25 not the case in law that you are prevented from

1 questioning one witness' expertise simply because you
2 didn't question another witness, which isn't the case.

3 MADAM CHAIR: Thank you, Mr. Cassidy.

4 I think the Board has made it clear we
5 are going to hear Dr. Hutchinson. We can spend time
6 now listening to objections that will take longer than
7 what he is going to say on this topic, but I don't
8 think we'll do that.

9 We understand that you are objecting and
10 we expect you to spend time on that in your
11 cross-examination.

12 MS. SWENARCHUK: Q. Dr. Hutchinson, the
13 question that set off this scintilating debate was my
14 question to you as to whether any ecological concerns
15 arise from the use of single species plantations and I
16 wonder if you would respond to that question.

17 Did you want me to restate the question?

18 A. No, that's fine. It's really not a
19 genetic question anyhow, so I mean my own comment is,
20 it's fascinating this debate, but we're talking about
21 ecological aspects of using monocultures.

22 Well, there's a lot, as I said and I
23 attempted to say last time, there's a lot of
24 agriculture experience in monocultures and some of the
25 problems that can arise. The purpose in agriculture of

1 using monocultures is generally to attempt to get the
2 best kind of fit to some specific circumstances with
3 some very specific end points in view. The end point
4 generally is maximizing yield.

5 The problems that arise from that without
6 crossing species; that is, ones which have -- they
7 require two plants of different sex to produce progeny,
8 and that is mainly the case with forest trees. The
9 problem that arises without crossing species is that
10 when you select a subset of the overall diversity of
11 genetics to go into a particular direction, then
12 there's a risk, there's a certain risk involved and the
13 risk is that the micro-organisms, the pathogens, insect
14 and particularly bacterial and fungal pathogens now
15 have a smaller subset to occupy their time, and if they
16 happen to get the key to unlock the system for
17 infection, as has happened very many times with rust
18 outbreaks of wheat, for example in Canada, when they
19 can get into one they can get into them all.

20 Now, in forest genetics, we're not
21 producing, we're not cloning, we're not producing - at
22 least to a very limited extent - we're not basically
23 producing identical individuals. So we are maintaining
24 some variability there, but obviously if we go to
25 nursery stock, we have reduced the variability that's

1 out in there in the field. And we're not on site
2 specific trials generally, so we do have the
3 possibility of limited -- reduce the genetic diversity
4 that exists in the natural forest.

5 Now, as I say, it's a chance thing as to
6 whether that might prove to be a disadvantage or an
7 advantage, but it clearly increases the potential risk.

8 There are some good examples of this
9 actually from forests where there has been concern of
10 using monocultures. Now, I should also say as an aside
11 that clearly where we have large burn areas being
12 reoccupied by jack pine, for example, or black spruce,
13 then we have something that we might think of as a sort
14 of something approaching a monoculture, but in those
15 situations we still have a much greater genetic
16 diversity than we would have in a situation in which
17 we're planting a limited amount of genetic stock out
18 there.

19 In Germany, there is concern that some of
20 the forest decline problems are from the use of nursery
21 stock of limited diversity, especially there is a
22 professor there called Professor Schultz who feels that
23 a lot of the German forest decline problems in Norway
24 spruce are arising because they've used some stock
25 which I think is from southern Sweden and they've

1 planted this very, very extensively about 30 and 40
2 years ago and his opinion is not accepted by everybody,
3 of course, but his feeling is they have set themselves
4 up for some problems by using this limited genetic
5 stock.

6 MADAM CHAIR: Excuse me, Dr. Hutchinson.
7 Is seeding as potentially limiting in its genetic
8 diversity as seedlings, using seed as opposed to --

9 MR. HUTCHINSON: No. Seeding, generally
10 speaking, would increase the genetic stock.

11 MS. SWENARCHUK: Might I ask, Madam
12 Chair --

13 THE WITNESS: You mean artificial
14 seeding?

15 MADAM CHAIR: Yes.

16 THE WITNESS: Yes, that would -- well, It
17 depends on how many seed trees you are using to produce
18 the stock, but the general practice is to collect from
19 a large number of seed trees and that nevertheless
20 would not be as -- you can't be extensive as you are in
21 nature of course.

22 It sort of steps down in terms of how
23 narrow we get into genetic diversity from the natural
24 situation.

25 Of course, to go back to some of the work

1 on eco-types, it's very clear that we have diverse
2 habitats in the boreal forest, even though we might
3 have, say, black spruce or jack pine, but the
4 populations are locally adapted, if you like they've
5 been constantly tested and tried in that environment
6 from seeding and it's a process of natural selection,
7 so we have locally adapted populations.

8 Now, these can be on quite a broad scale,
9 but in black spruce, for example, there is evidence
10 that we have upland versus lowland populations.

11 MS. SWENARCHUK: Q. A couple of points
12 of clarification, Dr. Hutchinson. You used a reference
13 suggesting -- you made a reference, used the phrase "we
14 are not doing site specific trials". What do you mean
15 by that?

16 A. Well, I mean that in practical terms
17 we're not going to a site that we're wishing to replant
18 and then saying: Well, we have collected the seed
19 trees in advance from this particular area so we are
20 putting back into that area, if you look, the genetic
21 material and the variability which is occurring for
22 that site. That isn't the way we operate generally. I
23 mean, there may be advantages to it and there is
24 obviously some practical difficulties to doing that.

25 Q. You referred to concerns related to

1 this issue rising in Germany. Is there also a concern
2 arising in New Zealand?

3 A. Well, there is a concern about what
4 happened to some of the forests in New Zealand. I
5 think they've used particularly white or red pine and
6 that's been planted, if you like, outside of its range,
7 it doesn't occur there naturally and they planted north
8 American material.

9 And things were looking pretty good for
10 about the first 25 years, but my understanding is that
11 they have run into difficulties. The reasons are not
12 absolutely clear at the moment, but one of the avenues
13 that's been pursued to try and explain these
14 difficulties is that they have got some limitations in
15 the variability. There's not a good fit ultimately to
16 the environment that they have put it into.

17 There are some similar concerns in
18 Britain in the forest plantations of the forestry
19 commission. They've planted very extensively with
20 species -- we are not talking about sub-populations,
21 but species which are North American, like citrus
22 fruits, and that's been very successful for quite a
23 long time, but the difficulties have begun to arise
24 now.

25 Q. And about at what age are the forests

1 where there are difficulties now, approximately?

2 A. They've been planting those since the
3 1930's, so I suppose it would be 50, of 60 years old.

4 Q. And while we are on this topic, Dr.
5 Hutchinson, the Board has heard extensive evidence of
6 stocking assessments done at the five year age for
7 seedlings and, in your view, is a five-year assessment
8 appropriate to assess the future forest growth, the
9 plantations?

10 A. Well, it certainly serves some useful
11 function. It's substantially better than doing no
12 assessment. If it could be followed by an assessment
13 more towards the stage of canopy closure, which might
14 15 to 25 years, that would probably give you a better
15 feel for how your forest is ultimately going to do in
16 terms of success and wood production and so on.

17 So five years is -- well, in my opinion,
18 I think five years might be rather early in the
19 sequence if you are trying to determine what's going to
20 happen in your mature forest.

21 If you are trying to determine whether
22 you need to go in and do some further restocking, if
23 you've had planting there, then this of course merits
24 the doing of it, but 5 years and 15 or 5 years and 25
25 might be a better way of doing it.

1 Again, I know it involves more work and
2 it involves -- if you are really trying to assess how
3 your forests are going to do at 50 and 60 years or even
4 longer, then five years is perhaps having -- it's a bit
5 like trying to predict how a child of five years is
6 going to turn out as an adult. You get some pretty
7 reasonable idea, but you could be wrong.

8 Q. Let me look at it another way. How
9 good is the predictability of the future of that forest
10 growth from a five-year stocking assessment, in your
11 view?

12 A. Well, I have to go back and ask from
13 what point of view. It depends why you're assessing at
14 five years. If you're trying to see, have you
15 successfully occupied your site at an adequate planting
16 density, then, you know, that's a very reasonable thing
17 to be asking at five years.

18 If you're asking anything about what the
19 yield is going to be like or what they -- then, you
20 know, that becomes a little less predictable.

21 It would be much better to do a
22 subsequent follow-up at some later stage which I think
23 should be at the stage of canopy closure in which case
24 things have settled out. There is -- a self-thinning
25 process goes on in the forest; trees die off and there

1 is a substantial die off as time goes on and faster
2 thinning, of course.

3 Q. And again for conifers, that would be
4 at what age period?

5 A. Well, it depends on the fertility of
6 the site if it's a plantation or the density they've
7 planted out, but in a natural stand, from 15 to 25
8 years is a reasonable period for the canopy closure.

9 One of the problems perhaps with this --

10 Q. Excuse me, Dr. Hutchinson.

11 A. Sorry.

12 ---Discussion off the record

13 MR. MARTEL: Could I ask you a question
14 because we have had this from the beginning of time
15 which seems a long time ago with this hearing.

16 MNR takes the position, I think, that we
17 need a stocking assessment. The public, on the other
18 hand, and we heard it in our last couple of trips out
19 again, the public want to know what's left, what
20 survives and what doesn't survival.

21 Can we convey to the public in an
22 informed manner the difference of the -- and I'm
23 talking about the general public now, I'm not talking
24 about a classroom lecture, the difference between
25 stocking assessment and what the public is really

1 interested in and that is, how many trees stay alive
2 after they have paid to plant them, is what they want
3 to know, and the MNR's position is, we want to have a
4 stocking assessment, I think - I hope I am not putting
5 any -- of what is there at the end of five years in a
6 specific plot or plots.

7 MR. FREIDIN: You will recall, we have a
8 term and condition where we have indicated that there
9 should be reporting of second year survival stocking
10 assessments and other condition surveys which we
11 have --

12 MR. MARTEL: Is that a redraft, Mr.
13 Freidin, I can't recall?

14 MR. FREIDIN: No,, that was in the
15 original ones, I think.

16 MR. MARTEL: That's the survival
17 assessment; is it?

18 MS. SWENARCHUK: Mr. Martel --

19 MR. FREIDIN: It was an issue that we
20 raised and you will recall that there was some concern
21 from some of the other parties, industry being one,
22 about that, but it is in our terms and conditions.

23 MR. MARTEL: It's in your terms, okay.
24 I didn't recall that.

25 We got it last time out again and as your

1 counsel has asked about the five-year assessment, but
2 what we got when we were out last time again was: How
3 many trees were surviving and that's what the public I
4 think is primarily concerned with.

5 It might not be the proper way of doing
6 it, but nevertheless...

7 THE WITNESS: I am all in favour of
8 public education on these things. I think the public
9 would be shocked if they knew that self-thinning
10 occurred in the forest and, you know, that one-third at
11 least of the trees all die quite naturally in the
12 natural forest as a result, if you like, competition
13 and crowding.

14 The stocking assessment at five years, if
15 I caught that correctly, is to assess how successful
16 stocking has been and it's -- I mean, as an ecologist
17 it seems a little loose to me much, I think it is a 40
18 per cent success rate and I think it's may be 30 per
19 cent if you've got other than conifer species; that is,
20 conifer plus others, the conifers can be at 30 per
21 cent.

22 MS. SWENARCHUK: Q. Dr. Hutchinson, you
23 are referring to stocking standards in the FMA that we
24 discuss which is exhibit, I believe, 513.

25 A. Yes, that's right.

1 Q. Proceed.

2 A. So, you know, the public has concern
3 about how much failure takes place because I suppose
4 they see seedling and sapling deaths as something
5 undesirable and the stocking assessment isn't going to
6 help them too much with that information.

7 I think they might be a bit shocked if
8 they also recognized that the stocking assessment,
9 which is a good thing to be doing, is at a 40 per cent
10 success rate not 40 per cent occupancy.

11 I don't think I've answered your question
12 very well.

13 MR. MARTEL: If you had your druthers,
14 what would you do to convey it to the -- well, how
15 would you try to convey it or what would you try to
16 convey to the public who is paying for it?

17 THE WITNESS: Well, obviously the first
18 thing is, I think the public would be reassured if they
19 felt that the planting survival of -- the plant
20 survival was at a high percentage. If they feel it's a
21 low percentage, they are upset because they feel that
22 things are not succeeding.

23 I think they've got to be educated as to
24 the stocking assessments and the subsequent ones
25 which -- or subsequent one which I do believe would be

1 a useful thing to be doing, relates to the final forest
2 that is going to be there at 60 or 80 years.

3 So there is a big jump from those early
4 stages and they hear things about large percentage
5 failures and things in newspaper articles.

6 MS. SWENARCHUK: Mr. Martel, I could
7 offer to come back to this subject with Crandall Benson
8 in witness statement No. 5 if that would be assistance
9 to the Board.

10 MR. MARTEL: Yes, because I still worry.
11 I mean, we've heard it again I think when we were out
12 and I'm not sure how one gets the message across to the
13 public of what it is we are trying to achieve and what
14 we are achieving and so on, so that there is some sense
15 of satisfaction, for their investment they are getting
16 a good return on their buck and I don't think -- I just
17 heard, you know, one newspaper story and all hell
18 almost breaks loose again because we are just wasting
19 money, and somewhere along the line we are going to
20 have to get the message across to the public so that
21 they are satisfied that what's occurring is beneficial
22 in the long run.

23 MS. SWENARCHUK: I guess it would be fair
24 to remind you, Mr. Martel, that the position of Forests
25 for Tomorrow on exactly this question perhaps is

1 different than the position of the Ministry of Natural
2 Resources.

3 MR. MARTEL: On a few positions.

4 MS. SWENARCHUK: That is on the issue of
5 whether the public's money is being, we will say, well
6 spent.

7 MR. MARTEL: Well spent.

8 MS. SWENARCHUK: Now, there are just a
9 few questions that I want to review with Dr. Hutchinson
10 for clarification out of issues raised last week, Madam
11 Chair, and then we will go on to the Forests for
12 Tomorrow terms and conditions that this witness
13 statement supports.

14 Q. In any event, first of all, Dr.
15 Hutchinson, you referred last week to the chronological
16 study by Mr. McLaughlin and I just wanted you to list
17 some of the species that were studied in that study,
18 please?

19 A. Okay. Well, I mentioned two of them
20 last time. I think there were 12 altogether. In fact,
21 I know there were 12 altogether in which they found --
22 and this was the study done in the eastern United
23 States, and they were attempting to see whether there
24 had been any alterations in annual increment growth
25 and, if so, at what period and obviously why.

1 They looked at 12 species and in 8 them
2 they found declines in growth which seemed to have been
3 initiated around about the year 1960. In the 12 was
4 sugar maple, tulip tree which is also called yellow
5 poplar in the States, red spruce, balsam fir, I think
6 they looked at yellow birch, white oak, American beech.

7 How many is that we've got there?

8 Q. I don't know.

9 MR. FREIDIN: Seven.

10 THE WITNESS: Seven, okay.

11 MS. SWENARCHUK: Q. Hemlock is one?

12 A. Pardon?

13 Q. Hemlock.

14 A. Hemlock, yes. Oh, haven't I said
15 hemlock.

16 Q. And red spruce?

17 A. Red spruce, yes.

18 MR. FREIDIN: He said that already.

19 THE WITNESS: I can't remember all 12 of
20 them I'm afraid.

21 MS. SWENARCHUK: Q. Now, to your
22 knowledge, are there tulip trees within the area of the
23 undertaking?

24 A. No, tulip trees -- carolinian element
25 in Ontario.

1 Q. Okay. And one last question related
2 to the air pollution issue. Are the boreal species
3 known to be particularly sensitive to ozone pollution?

4 A. Yes. Jack pine is one of them that's
5 listed as very sensitive. I think I might have said
6 eastern white pine last week, eastern white line, jack
7 pine. Those would be two.

8 Q. And a couple of questions regarding
9 climate change just to put this issue of change in some
10 kind of context.

11 Dr. Hutchinson, what degree of change
12 would be necessary to bring another ice age into
13 Canada?

14 A. Well, if we start dropping the
15 temperature, the ambient temperature summer and winter,
16 if we drop it one degree the ice starts advancing. I
17 suppose your question is, how much will we need to get
18 it to -- to ultimately get the glaciers back in
19 Toronto.

20 I think that's about a drop of 7 degrees
21 Celsius would do that. It's surprisingly small
22 actually. If we get it down to minuw five ambient from
23 the present temperatures, we will have a very
24 substantial advance of the glaciers. The last
25 glaciation had the temperatures about minus seven from

1 the present.

2 Q. And what temperature drop would
3 result in the elimination of wheat crops on the
4 prairies in Canada?

5 A. You know the prediction is for
6 increased temperatures, so --

7 Q. Yes, but we're just looking at --

8 A. Wheat crops on the prairies. Well,
9 there has been a very nice modelling study done by
10 Agriculture Canada on that and if we drop the
11 temperature one degrees Celsius, there is actually an
12 increase -- that's from the present summer
13 temperatures. Now I'm talking about the summer growing
14 season for the wheat study.

15 If we drop it one degree Celsius, there
16 is actually an increase on the prairies in wheat
17 production and that's because water supply is a
18 critical feature there, so it's a limiting factor.

19 If we drop it two degrees, then you lose
20 a lot of the wheat areas that we presently have. It's
21 sort of pulled back in towards the United States
22 boundary and if we drop it three degrees ambient for a
23 growing season, there is no wheat production possible
24 in Canada. So minus three would eliminate all our
25 wheat grown on the prairies.

1 Q. Now, one question relating to your
2 discussion of rutting and compaction last week. You
3 referred to a 15 per cent use of modified equipment.
4 In what area does that -- to what area does that 15 per
5 cent apply?

6 A. I think that was information provided
7 previously from the Industry and it was to do with the
8 Clay Belt.

9 Q. Yes. I asked you last week about
10 ecological reasons to limit the size of clearcuts and
11 our notes indicate that your response was to the effect
12 that the size of a clearcut is a very important
13 ecological issue.

14 Could you just summarize quite briefly
15 why in your view -- first of all, whether there are
16 ecological reasons to limit the size of clearcuts?

17 A. I think there certainly are.

18 Q. What would those reasons be?

19 A. Well, one of them would be, if we are
20 talking about natural regeneration from seeding in of
21 your native species, in that case you would want to
22 have -- your dimensions would be clearcut and the shape
23 of it organized in such a way that natural seeding then
24 could occur with a high probability and that gets you
25 to -- for the coniferous species like jack pine and

1 particularly black spruce, then we are talking about
2 two times the height of the mature forest. So that
3 might be the sort of dimensions that were cut.

4 If you've got 60 foot or 70 foot trees,
5 then, you know, you'd have twice those as a natural
6 seeding distance. Of course you'd be seeding in from
7 both sides, so you can move it out a bit beyond that.

8 MADAM CHAIR: Excuse me, Dr. Hutchinson,
9 but you could also -- you are not looking at leaving
10 seed trees or leaving stands of trees for the seedling?

11 THE WITNESS: No. If you are leaving
12 seed trees, then you would have that sort of circle
13 around the seed trees, yes.

14 The other aspects in terms of the
15 landscape and watershed is the percentage of the
16 watershed which is occupied by your clearcut because
17 the watershed is going to increase the possibility of
18 erosional losses and it is going to increase the
19 run-off from site. Material that isn't evaporated is
20 now going to go up from a site or into the ground
21 water.

22 So if you have a large percentage of your
23 watershed occupied by a clearcut, then you are going to
24 significantly increase the stream flow. Large
25 clearcuts will allow snow accumulation in the winter

1 and rapid run-off in the spring compared with the snow
2 which falls into the forest. So you are likely to
3 increase your peak run-off period and I suppose there
4 is a potential for flooding.

5 The portion of your watershed occupied
6 also will relate to some nutritional losses. I think
7 one of the things I introduced last week suggested
8 many -- 10 per cent of a watershed was a reasonable --
9 about 10 per cent of the watershed was reasonable and
10 that was to prevent erosional losses, excess water flow
11 off the site and the solution -- nutrient solution
12 losses.

13 There is -- a very large clearcuts would
14 present -- I mean, very large ones. We're talking
15 about thousands, several thousand hectares. That would
16 present some problems for wildlife, certain birds, for
17 example. I presume this will be dealt with later on,
18 but certainly birds and animals would be inhibited from
19 crossing the large open areas like that and they would
20 also be -- potentially be subjected to predation.

21 The clearcuts, gaps in the forests
22 substantial gaps increase the possibility around the
23 edges of any effects from winds and this increases the
24 probability of freshly exposed trees around the edge
25 blowing down, so blowdown is increased.

1 It depends on the dimensions of your
2 cuts, but the larger the cuts, the greater the
3 probability -- or the greater the possibility I should
4 say of edge trees being blown down. If you have a
5 long -- if you have a cut which narrows, for example,
6 and you have a large fetch, a large open area from one
7 end to the area and the wind is channelled, then the
8 wind speed increases and at the far end of it, the
9 narrow end of it it's like a wind tunnel effect. It's
10 like walking down Bay Street. It wouldn't be quite as
11 severe as that of course in the forest, but that's --
12 during high wind speeds this will increase your wind
13 speeds as it goes above the forest.

14 As I say, there's many effects with any
15 gap that you put into the forest, any significant gap
16 that the wind can get into.

17 Those are some reasons. Particularly the
18 natural seeding in though, I would say, is -- for your
19 conifers, that's important. A lot of your hardwood
20 species, sometimes we call them problem species, in the
21 boreal forest have small seeds, things like alder and
22 poplar and willows. These have small seeds, much
23 smaller actually than the jack pine and the black
24 spruce and this means that they can disperse very
25 readily and this would give them these sometimes

1 undesirable hardwoods a competitive advantage in terms
2 of occupying the site.

3 There's a micro-climate degradation at the
4 edge of your -- if you have narrow cuts and if they're
5 narrow enough, then you can reduce this micro-climate
6 variation. You can reduce the high summertime
7 temperatures if the cut is narrow enough.

8 Q. I would like to turn now to the
9 silvicultural prescriptions which are part of Forests
10 for Tomorrow's revised terms and conditions and I will
11 distribute those now.

12 You have a copy, Dr. Hutchinson?

13 A. Yes.

14 MADAM CHAIR: Do you want this to be an
15 exhibit, Ms. Swenarchuk.

16 MS. SWENARCHUK: I believe so, Madam
17 Chair. It will be part of the final revised terms and
18 conditions, but for convenience, I think it's
19 preferable.

20 MADAM CHAIR: That will be Exhibit 1416.
21 This is a five-page excerpt of conditions one through
22 five of Forests for Tomorrow's November 28th draft
23 terms and conditions, and the subject is silvicultural
24 prescriptions.

25

1 ---EXHIBIT NO. 1416: Five-page excerpt of conditions
2 1 through 5 of FFT's November
3 28th draft terms and conditions
 re silvicultural prescriptions.

4 MS. SWENARCHUK: Q. I want to ask you
5 about some sections of these terms and conditions, Dr.
6 Hutchinson. First of all, looking at the first page
7 under General, section 1(1), paragraph (b), about
8 halfway down the page.

9 A. Okay.

10 Q. "Silvicultural prescriptions shall
11 simulate or be guided by natural
12 ecological processes to the greatest
13 possible extent in order to minimize or
14 prevent any ecological disruptions and
15 to achieve maximum stability of the
16 stands."

17 Are you in agreement with that principle?

18 A. Oh yes.

19 Q. Now, in your view, are there
20 ecological reasons to favour natural regeneration
21 techniques?

22 A. Well, it's a desirable direction from
23 several points of view. One is that obviously it means
24 that you will be providing back into the site. Natural
25 regeneration on the site, presumably you mean.

1 You'll be putting in there the locally
2 adapted or the local sources of material, so the
3 chances that they will be able to tolerate the
4 conditions which they experience, apart from very rare
5 extremes is high, is higher than bringing material from
6 elsewhere.

7 The natural seeding process. This has to
8 be linked in with the size and shape of cuts and things
9 of this kind. It would be a forlorn hope to have very,
10 very large clearcuts and then say: Well, we will just
11 wait for natural seeding to take place because this
12 site might be converted to something that wasn't there
13 initially. So if this is linked to cutting practices,
14 then I'm very much in favour of it and I think it
15 should be --

16 Q. We will come to that --

17 A. --in practice, you should relate it
18 to this general idea.

19 Q. Well, in that case, let's turn now to
20 the next page and the prescriptions with regard to the
21 black spruce working group. You've had a chance to
22 review this; have you not, Dr. Hutchinson?

23 A. Yes.

24 Q. And the prescriptions are for strip
25 cutting, patch cutting or block cutting in regular or

1 irregular shapes. In all cases, no more than 50 per
2 cent of the total stand shall be removed in the initial
3 cut and the width of openings shall not exceed twice
4 the height of the trees. Before the final cut occurs
5 in these areas, adjacent cut-over areas must be
6 producing viable seed.

7 Now, do you agree that that's an
8 ecologically sound prescription?

9 A. Yes.

10 Q. Then with regard to jack pine, which
11 is paragraph (c) on page 3 of the prescriptions, they
12 provide for clearcutting in blocks of various sizes to
13 a maximum of 100 hectares in area.

14 Now, in your view, are there ecological
15 reasons to limit the size of the cuts to that size?

16 A. Well, I've just been through a number
17 of ecological reasons why I think that clearcut size
18 should be limited and 100 -- I'm sorry, I'm not
19 following this on this paper, is it 50 hectares or less
20 or is it 100?

21 Q. It is 100. We are looking at
22 paragraph (c), jack pine working group.

23 A. Right.

24 Q. Page 3, then the third line of that
25 paragraph:

1 "Clearcutting harvest shall be carried
2 out in blocks of various sizes..."

3 Do you have it now?

4 A. Okay. It just didn't say the sizes.

5 Q. "Block size will be dictated by site
6 productivity, but cut-overs shall not
7 exceed 100 hectares in area."

8 A. Right. I'm sorry, I missed that bit
9 at the end, the cut-overs shall not exceed 100 hectares
10 in size.

11 Q. Now, in your view, are there
12 ecological reasons to use that limit on the size?

13 A. Well, 100 hectares is a pretty large
14 gap in the forest, but it is one in which I think there
15 can very successful regeneration and we can extrapolate
16 to average sizes of fires and things of that kind. So
17 these are gaps which are the commonest fire size sorts
18 of gaps which occur. I mean, it's in that sort of
19 region. It depends on year to year and so on, but
20 there's reasons why 100 hectares would be a reasonable
21 size.

22 And for jack pine, which is after all
23 principally a post-fire species, I think there's -- to
24 go up to that size from the two tree heights and so on
25 I think is a reasonable way to proceed.

1 Q. Now, I would like you to look at
2 paragraph 2(2) at the bottom of the page. It begins:

3 "Within the area of the undertaking
4 full-tree logging shall be restricted to
5 highly productive sites..." et cetera.

6 Do you have that paragraph?

7 A. Yes.

8 Q. It continues on to the next page.

9 Now, in your view, is this a reasonable restriction on
10 full-tree logging?

11 A. Yes.

12 Q. Is it an ecologically sound one?

13 A. Yes. I think -- well, I haven't --
14 yes, I think that's reasonable.

15 This relates to nutrient removal of the
16 site and there is obviously quite widespread concern
17 about nutrient removal from poor sites, nutrient poor
18 sites and there is some concern being expressed about
19 nutrient removal from moderate sites.

20 So I presume that this then is to say
21 that we will take the conservative approach, a
22 conservationist approach and restrict full-tree logging
23 to highly productive sites where we think we can
24 successfully regenerate generations into the future.

25 Q. And on page 4 of the prescriptions,

1 the first full paragraph on the page, paragraph 2(3)(a)
2 relates to -- is defined or identified midway through
3 the paragraph, shallow soil sites.

4 A. Right.

5 Q. "No harvesting shall be permitted
6 unless the area can be naturally or
7 artificially regenerated to a stand at
8 least equal to or superior to the species
9 and density of the stand that is
10 harvested. Where harvesting may be
11 carried out on shallow soil site, only
12 conventional bole harvesting methods
13 shall be utilized."

14 Do you agree with that prescription?

15 A. Yes.

16 Q. For what reason?

17 A. Again, to do with conservation of
18 nutrients on the site and the substantial additional
19 losses of biomass and nutrients that are incurred when
20 you go to full-tree harvesting.

21 On shallow sites, in particular, I think
22 conservation of organic matter is important and
23 therefore the extra biomass you are removing in
24 addition to the nutrients is a critical factor.

25 Q. The next paragraph then, Dr.

1 Hutchinson, talks about sites that are sensitive given
2 issues of nutritional status, slope, soil depth, soil
3 type and texture or drainage. And on these sensitive
4 sites, no harvesting shall be permitted unless the area
5 can be naturally or artificially regenerated as in the
6 previous paragraph and, again, where harvesting may be
7 carried out on a sensitive site, only conventional bole
8 harvesting methods shall be utilized.

9 Do you agree with that prescription?

10 A. Yes, I do.

11 Q. And for what reason?

12 A. Again, it relates to the direction
13 that I think we should attempt to maintain our forests
14 in; that is, a sustainability of sites and forests over
15 long periods of time and the nutritional status that's
16 taken into account there, soil depth is partly a
17 function of that.

18 And site texture, drainage, et cetera,
19 this would look after the sites which are particularly
20 vulnerable to nutritional run down and, therefore, I
21 think that's an appropriate prescription.

22 Q. And for the record, we are discussing
23 here paragraph 2(3)(b).

24 And if I could direct your attention,
25 please, to paragraph (2)(4), it requires that the MNR

1 expand and improve the forest ecosystem classification
2 system to ensure that the system considers and
3 incorporates information related to the successional
4 trends and forest floor changes caused by harvesting
5 and, further, that the FEC system be expanded to
6 incorporate and reflect information related to site
7 productivity and that this information then be
8 incorporated into practical guidelines to assist forest
9 managers in the development of appropriate site
10 specific prescriptions.

11 Are you in agreement with those
12 provisions with regard to the FEC systems?

13 A. Yes, I think that's -- I think that
14 would be a very desirable direction. I think the FEC
15 system has a lot of potential and if it's expanded,
16 tested and, if you like, calibrated against some of
17 these other parameters I think you have earned against
18 silvicultural prescriptions and successes, then I think
19 you have the potential for good systems for site
20 specific management.

21 Q. And just two more references to
22 review with you. At the bottom of this page, paragraph
23 3(2), allows a prescription to the standard set out
24 above if it is determined by a senior biologist that
25 large areas of a similar age class are specifically

1 required for species of wildlife known to inhabit the
2 area of proposed operations. The rationale for such a
3 silvicultural exception is to be documented by the
4 biologist and the the harvesting conducted in
5 accordance with the biologist's prescription.

6 Do you agree that provision for this
7 exception is ecologically desirable, Dr. Hutchinson?

8 A. Yes, if it's -- if there is
9 particular need which isn't presently filled for a
10 certain species, then yes, I agree.

11 Q. And lastly, if you would look at
12 paragraph 5 on page 5:

13 "The MNR shall ensure that rapid
14 regeneration or active revegetation
15 occurs on cut-overs in order to
16 accelerate nutrient cycling and
17 biological activities in the forest
18 floor."

19 Is that an ecologically desirable
20 prescription, in your view?

21 A. I think it's very important that
22 cut-over sites be revegetated rapidly to ensure that
23 you don't have one reasonable site conversion to a void
24 site conversion, and the second reason would be
25 maximizing utilization of the nutrient so you prevent

1 nutritional losses.

2 MR. MARTEL: Can you repeat the first
3 one. I didn't get it, I'm sorry.

4 MS. SWENARCHUK: Q. It was in reference
5 to site conversion, Dr. Hutchinson.

6 A. If you don't get in quite rapidly
7 either with some prescription, natural prescription
8 which works or with an artificial reseedling or
9 replanting, you can have site conversion, things can go
10 in a direction because of the clearcutting systems or
11 the harvesting systems that may not be desirable, and
12 you could have a conversion from a softwood site to a
13 hardwood site which then presents some real
14 difficulties in getting it back again later on. So the
15 quicker you can get in the better.

16 I think it's undesirable to have sites
17 left unoccupied for long periods of time after cutting.

18 MS. SWENARCHUK: Those are our questions
19 for Dr. Hutchinson, Madam Chair.

20 MADAM CHAIR: Thank you, Ms. Swenarchuk.

21 Mr. Hanna will be doing his
22 cross-examination and he was told to be here at 1:30
23 today. So we are going to adjourn now unless -- are
24 there any other matters that the parties are going to
25 raise at some point today that we could take care of

1 quickly now?

2 Did you have some exhibits you were going
3 to put in, Mr. Freidin? I got a note from Ms. Murphy
4 about silvicultural guides for pine and -- two guides
5 that you had produced. Did you want to make those an
6 exhibit?

7 MR. FREIDIN: I don't have copies to make
8 them. I will make arrangements to get them and then we
9 will file them.

10 MADAM CHAIR: All right. Did you receive
11 a notice about the dates for submission of statements
12 of issue and for scoping Forests for Tomorrow's Panel 2
13 witness statement.

14 MR. FREIDIN: Next Tuesday; is it not. I
15 received it.

16 MADAM CHAIR: All right.

17 MR. CASSIDY: Madam Chair, just in terms
18 of the scheduling, is it the Board's intention to rise
19 at four o'clock on Thursday? I think that's what it
20 was in the scheduling notice.

21 I don't mean to pry, but is that as a
22 result of Mr. Martel having to catch a plane? The
23 reason I ask is I may have a procedural matter I wish
24 to raise, a very brief procedural matter I wish to
25 raise at the end of the day on Thursday.

1 I am not in a position to raise it today
2 because I am still looking at some transcripts and I
3 just wonder if we might have 10 or 15 minutes at the
4 end of day on Thursday to deal with that. It wouldn't
5 take any longer than that.

6 MS. SWENARCHUK: Are we going to have a
7 Notice of Motion on that, Mr. Cassidy?

8 MR. CASSIDY: Oh, no, it's nothing. It
9 is just a matter of deadlines and timing of things. It
10 is not in respect of asking you to do anything or not
11 do anything.

12 MADAM CHAIR: If it takes no longer than
13 10 or 15 minutes, Mr. Cassidy, then we will do that on
14 Thursday.

15 MR. CASSIDY: It is just a question I
16 have of the Board, but before I can ask the question I
17 want to make sure I know what I am talking about, so I
18 have to continue reviewing some transcripts.

19 MADAM CHAIR: Okay, thank you.

20 MR. CASSIDY: Thank you.

21 MADAM CHAIR: We will be back at 1:30.

22 ---Luncheon Recess taken at 11:35 a.m.

23 ---On resuming at 1:40 p.m.

24 MADAM CHAIR: Please be seated.

25 Good afternoon, Mr. Hanna.

1 MR. HANNA: Good afternoon, Madam Chair,
2 Mr. Martel.

3 Madam Chair, before I begin, I would like
4 to express my thanks to the Board for the special
5 allowance you made for me to start my cross-examination
6 at a specific time.

7 It's an unfortunate situation I find
8 myself in and I don't expect it will last beyond
9 October, but unfortunately that's the circumstance I am
10 in and I do appreciate the Board's indulgence.

11 Good afternoon, Mr. -- Dr. Hutchinson,
12 excuse me for my already lapse.

13 CROSS-EXAMINATION BY MR. HANNA:

14 Q. Dr. Hutchinson, I have a number of
15 topics that I wish to discuss and before I start I want
16 to set out for you a basic thrust of all the questions
17 I will put to you and it is this: I am interested in
18 exploring with you what the implications of your
19 evidence are in terms of the decision this Board can
20 make and the ultimate timber management planning
21 process that's set up in the province.

22 So underlying everything I do will be
23 that basic thrust. So I want you to bear that in mind
24 as we go through the evidence.

25 I would like to start -- the first topic

1 I would like to start with is a topic that my client
2 has pursued at this hearing to a fair extent and that
3 is soil compaction. I would like to obtain your views
4 on that.

5 Now, first of all, I believe the matter
6 of soil compaction is dealt with in three places in
7 your witness statement. It is dealt with on page 2, on
8 page 3 and page 30. Can you confirm for me that those
9 are the locations in your witness statement in which
10 this topic is discussed?

11 A. I am sure you're correct, yes.

12 Q. Are there any places that I have
13 missed?

14 A. No, I don't think so.

15 Q. Now, I was somewhat surprised,
16 because of the importance that my client has placed on
17 this issue, that you did not see fit to deal with soil
18 compaction in the executive summary.

19 Is there something I am supposed to infer
20 from that?

21 A. No.

22 Q. It was just an oversight?

23 A. Well, if you infer that, yes. That's
24 your inference.

25 Q. Why was it not in the executive

1 summary?

2 A. The main focus of my witness
3 statement was to deal with nutritional losses, impacts,
4 comparisons of fire and clearcut and size of clearcuts,
5 size of fires, but particularly the witness statement,
6 one which you have interrogatories on, was concerned
7 with nutritional aspects.

8 Q. So from your point of view,
9 ecological impacts of timber management activities
10 exclude soil compaction?

11 A. No.

12 Q. Well, then I come back to my
13 question. Why did you not deal with soil compaction in
14 your executive summary and more extensively in your
15 report?

16 A. Why didn't I deal with it more
17 extensively in my report.

18 Q. Or your -- and didn't even mention it
19 in the executive summary?

20 A. Well, it's going to be dealt with in
21 some of the other witness statement.

22 Q. Can you tell me which, please?

23 A. I believe --

24 MS. SWENARCHUK: Well, that's an
25 appropriate question for me, Madam Chair.

1 Had Mr. Hanna been present to hear the
2 direct examination last week, he would be aware that we
3 specifically referred to witness statement No. 5 as an
4 area where this be addressed further, as well if Mr.
5 Hanna has had an opportunity to read our witness
6 statements, he will see references to witness statement
7 No. 3.

8 MR. HANNA: That would have been most
9 useful information to have received in the
10 interrogatory responses, Madam Chair.

11 MS. SWENARCHUK: Was the question asked?

12 MR. HANNA: There was a number of
13 questions asked in the interrogatories with respect to
14 soil compaction.

15 If this witness was not intended to deal
16 with soil compaction, it would have been most useful
17 for the parties to be notified that this was not the
18 witness to deal with that topic.

19 MS. SWENARCHUK: Well, we might as well
20 deal with this question now. I don't know whether Mr.
21 Hanna has had an opportunity to do what any
22 cross-examiner is in the legal system obliged to do;
23 and that is, to review the direct testimony of the
24 witness concerned.

25 If he has done so, he will be aware that

1 Dr. Hutchinson did deal with that topic rather briefly
2 in his testimony last week. He will also be aware, if
3 he has had an opportunity to look at the transcript or
4 has someone taking notes for him as he perhaps could be
5 expected to do last week, that in our introductory
6 statement we outlined the underlying principles of the
7 case, being that ecological principles will be repeated
8 throughout our evidence and one can reasonably infer
9 from that that such questions as soil compaction are
10 one of them.

11 However, in any event, witness statements
12 have all been delivered and amongst the early ones,
13 witness statement No. 3 and No. 5, references to soil
14 compaction are there, that information is available to
15 Mr. Hanna.

16 May I just go on to say that this
17 question and any others which arise from Dr.
18 Hutchinson's direct testimony last week, if they are to
19 lead to in fact a repetition of Dr. Hutchinson's direct
20 testimony, Mr. Hanna not being present last week, we
21 will be objecting. In our submission, it is the
22 obligation of any cross-examiner to be well aware of
23 the evidence that has been presented in direct and it
24 does not serve the Board's time nor my client's
25 resources for all of us to be here and require repeat

1 of that direct.

2 MADAM CHAIR: What Mr. Swenarchuk seems
3 to be saying, Mr. Hanna -- and you have only got a few
4 hours so you better make every minute count.

5 What Ms. Swenarchuk is saying is that you
6 probably will get your questions answered more fully in
7 witness panels 3 and 5, so why don't we move on to the
8 next question.

9 MR. HANNA: Madam Chair, I feel it's
10 imperative that I respond on the record to the comments
11 that have just been made.

12 First of all --

13 MADAM CHAIR: Mr. Hanna, don't give a
14 speech. I don't think you are going to be putting in
15 time usefully this afternoon. We have your objection
16 that you feel you would have been better advised had
17 Ms. Swenarchuk responded to your interrogatories and
18 told you to pursue them in subsequent panels.

19 MR. HANNA: Madam Chair, there are a
20 number of very serious allegations on the record that I
21 need to deal with them and I would like to deal with
22 them now, if I could.

23 MADAM CHAIR: It's your time, Mr. Hanna.
24 We are not going over today for your cross-examination,
25 so you decide how you want to use it.

1 MR. HANNA: Madam Chair, it is most easy
2 for Ms. Swenarchuk to stand up and make the comments
3 she has made. Citizens of this country and of this
4 province are paying for her time and Mr. Lindgren's to
5 sit here. There is no one paying for me from the
6 public purse.

7 It is very easy for her to make those
8 sort of accusations, recognizing the extreme resource
9 limitations that my client is under. I find it is most
10 inappropriate.

11 I have just come, as you know, from the
12 Ontario Waste Management Corporation hearing. We have
13 intervenors there that have \$3.2-million of intervenor
14 funding, they have transcripts provided to them at the
15 expense of the proponent, they have a number of other
16 very important support services made available to them.

17 My client has nothing of that nature. We
18 did our very best to get transcripts of the
19 evidence-in-chief of this panel. We made special
20 arrangements with the court reporters. I was to
21 receive the transcripts by courier on Friday, they
22 never appeared.

23 I am in a situation that is untenable. I
24 cannot come forward here and my client can't afford to
25 have people sitting here. If we had legal aid and had

1 the kind of funds available to us that some parties
2 have we could, but we don't. We made every reasonable
3 effort.

4 I am in an extremely disadvantaged
5 position, I realize that. I am also very conscious of
6 the comments that Ms. Swenarchuk made some months ago
7 that when she was going to lead her evidence-in-chief
8 how that she expected her evidence-in-chief would at
9 most a day, maybe less than a day, maybe half a day;
10 that it simply be an embellishment of what's in her
11 witness statements.

12 MS. SWENARCHUK: I have never said that.

13 MR. HANNA: Madam Chair, I will find the
14 transcript reference.

15 Could I please finish, Ms. Swenarchuk.

16 I am in a situation that I have been
17 forced into and I am making the best of. There has
18 been no other party that's come forward before this
19 hearing that this Board has said: You must hear the
20 evidence-in-chief, you must read the transcripts, you
21 cannot come here and ask questions unless you know
22 everything that's going on in this case.

23 I say to you, if you make a ruling of
24 that nature, all of the statements and good intention
25 that the Board has of making this system accessible to

1 the public will be thrown out the window, and I suggest
2 that Ms. Swenarchuk has used the most inappropriate
3 setting of my situation to base her objection and I
4 feel it is totally inappropriate.

5 I will continue.

6 Q. Dr. Hutchinson, in preparing your
7 witness statement, did you review Exhibits 519, 520,
8 251 and 523 introduced by the Otario Federation of
9 Anglers & Hunters?

10 A. Well, unless you tell me more about
11 them, Mr. Hanna, I don't think I can answer that
12 question. I don't believe I did, but perhaps you could
13 tell me what they are.

14 MADAM CHAIR: Mr. Hanna, did you say
15 those were your terms and conditions?

16 MR. HANNA: I'm sorry, Madam Chair?

17 MADAM CHAIR: What are you referring to?

18 MR. HANNA: I am referring to Exhibit
19 512, is a Method for Assessing the Environmental
20 Sensitivity of Land to Forest Harvesting in Central and
21 Western Newfoundland.

22 MR. CASSIDY: That's 519?

23 MR. HANNA: Yes.

24 MR. CASSIDY: You said 512.

25 MR. HANNA: I'm sorry.

1 Q. Did you review that, Dr. Hutchinson?

2 A. I don't believe I did. What was the
3 author of that one, please?

4 Q. Van Kesterin.

5 A. Okay.

6 Q. Exhibit 520 is Impacts of Forest
7 Harvesting on Physical Properties of Soils with
8 Reference to Increased Biomass Recovery, a Review, by
9 Standish, Commander and Smith?

10 A. I think I have seen that one. I
11 haven't reviewed it, though, not in connection with
12 this witness statement.

13 Q. Compaction by Forest Equipment and
14 Effects on Conifer Seedling Growth on Four Soils in the
15 Alberta Foothills by Ian Korn, Exhibit 521?

16 A. No, I don't think I've seen that one.

17 Q. Guidelines and Procedures to Minimize
18 Soil Degradation Due to Timber Harvesting in British
19 Columbia, a Decade of Good Intentions by Bill Carr,
20 Exhibit 523?

21 A. I don't think so.

22 Q. Why not?

23 A. Why have I not reviewed those?

24 Q. Yes.

25 A. Well, I hardly reviewed in any great

1 depth compaction, as you pointed out already, so why
2 would I have reviewed those? You've already pointed
3 out that it wasn't in my executive summary.

4 Q. Dr. Hutchinson, I was planning on
5 asking you a number of questions regarding soil
6 compaction because you made specific reference to it in
7 the places I have referred to in the witness statement,
8 you also responded to interrogatories dealing with soil
9 compaction.

10 Am I to take that you have no useful view
11 on soil compaction to make available to this Board and
12 I should hold all questions for subsequent witnesses?

13 MS. SWENARCHUK: Well, Madam Chair --

14 THE WITNESS: Well, you are making
15 inferences. You are making inferences. Why don't you
16 ask the questions and if I can answer them I will.

17 MR. HANNA: Q. I am not making
18 inferences at all, Dr. Hutchinson. You said to me --

19 A. There are no --

20 Q. Dr. Hutchison, let me -- listen, we
21 are going to go here, I finish, you start, I'll wait
22 for you, you wait for me; okay.

23 A. Right. I will put my hand up when I
24 have a question then.

25 Q. Now, you had said to me that you

1 didn't deal with it?

2 A. Pardon?

3 Q. You said to me you didn't deal with
4 it in any reasonable way and that's why you didn't
5 review --

6 A. I didn't say reasonable way. If you
7 will allow me to interrupt, I said in any great depth.

8 Q. So in terms of any conclusions and
9 opinions that you have reached with respect to these
10 articles, it is fair to say you haven't reached any?

11 A. I definitely have some opinions.

12 Q. Fine.

13 A. It wouldn't be fair to say what
14 you've just suggested.

15 Q. I beg your pardon?

16 A. It would not be fair to say that I
17 have reached no conclusions.

18 Q. With respect to the four articles I
19 just referred to?

20 A. No, I have no opinion on those four
21 articles.

22 Q. Listen carefully to the question. I
23 asked you with respect to those four articles. You
24 have no conclusions or opinions with respect to those
25 four articles?

1 A. Correct.

2 Q. Now, you did review the paper that
3 Mr. Greenwood introduced in his evidence; is that
4 correct?

5 A. Yes.

6 Q. Is it your view that this study is
7 sufficient to reasonably analyse the extent and
8 significance of soil compaction within the area of the
9 undertaking?

10 A. No, I don't think so.

11 Q. What research do you and your
12 colleagues have underway in respect to soil compaction
13 due to timber management harvesting or other timber
14 management practices in the area of the undertaking?

15 A. I have no research going on on soil
16 compaction.

17 Q. Or any of your colleagues?

18 A. How far do you want the colleagues to
19 extend?

20 Q. Your choice.

21 A. Well, I'm not aware of anybody in the
22 forestry faculty who is working directly on soil
23 compaction and certainly not in the botany department.

24 Q. In...? Sorry.

25 A. Certainly not in the botany

1 department.

2 Q. Do you feel that work on this subject
3 is necessary, research work?

4 A. Yes, I think it's an important area.

5 Q. Can you provide us any advice as to
6 the type of work that you feel is necessary?

7 A. Are you asking me to make some
8 suggestions on research that should be done?

9 Q. Absolutely.

10 A. If you feel that's a useful thing for
11 me to do, I could make some suggestions.

12 Q. I feel it's a useful thing for you to
13 do. Could you give some suggestions, please?

14 A. Well, we want to know obviously how
15 different types of harvest practices affect compaction
16 and then we certainly want to know how the different
17 types of compaction will affect science regeneration,
18 especially with respect to the compaction itself.

19 Q. You have got the types of
20 activities -- I'm trying to get these down and I can't
21 write as fast as you can talk. The first was the
22 relationship to the types of activities?

23 A. Yes.

24 Q. Okay. The second was?

25 A. We want to know something about -

1 well, I was just about to give you the second one -
2 nutritional aspects, seedling establishment or seedling
3 rehabilitation on the sites, natural versus artificial.

4 We would be interested, I think, on
5 certain types of sites of establishing when the worse
6 effects of compaction occur, wet sites versus dry
7 sites; similar activity, fall activity versus winter
8 activity and so on.

9 In fact, there is a significant amount of
10 this sort of information in the literature, but if we
11 are going to get very specific for Ontario, it may be
12 appropriate to carry out quite a detailed study on this
13 in northern Ontario.

14 Q. Have you reviewed the Ministry of
15 Natural Resources' proposals in terms of effects
16 monitoring and, in your view, does it -- does that
17 proposal deal adequately with the types of research
18 initiatives that you feel are necessary in Ontario with
19 respect to soil compaction?

20 A. I haven't reviewed them.

21 Q. What you have just described to me in
22 terms of the research needs is a fairly general list,
23 have you prepared or are you aware of any specific
24 submissions in terms of the type of research that would
25 be required that, if had Board saw fit, might direct

1 the proponent to undertake?

2 A. -Sorry, can you repeat the first part
3 of the question?

4 Q. I will go right back to where we
5 started. I am looking through you as an expert,
6 somebody in the field to give me your best opinion as
7 to the type of actions that this Board could direct the
8 proponent to undertake to deal with certain
9 environmental concerns.

10 We are dealing now with soil compaction.
11 I have here -- I don't mean this in a prejourative way,
12 I have a shopping lives. I am trying to get as
13 specific and detailed as I possibly can in the event
14 that this was seen as being a necessary action by the
15 proponent.

16 What I am asking is, you have given me
17 here four activites or four different things I might
18 consider, have you any idea in terms of how that should
19 be -- how they should take place?

20 How much of an effort, how much would you
21 have to undertake if I walked into your office and
22 said: I have got a pot of money, how should I spend
23 this money on soil compaction research?

24 A. Well, sometimes you wouldn't need to
25 know about, so it would be fairly clear I think that

1 the effects of soil compaction on frozen ground would
2 be very limited. So we might decide that the focus
3 should be on soil compaction during the growing season.

4 You might -- it depends on what questions
5 you wanted to ask, but if it is in terms of effects on
6 rehabilitation of sites, then we would need to try and
7 establish, if you like, what the limits might be in
8 terms of sensitivity. So presumably the soils which
9 have a high water content and a high silt clay content
10 would be the ones you might be most concerned with,
11 that is fine particle soils as opposed to coarse
12 particle situations. We can go on from there.

13 Q. Are you making recommendations to
14 your client in terms of specific research projects that
15 should be undertaken to deal with soil compaction?

16 A. No, I just answered your question.

17 Q. No, I understand that. You answered
18 my question, that was a new question. My question was:
19 Are you preparing or do you expect to prepare specific
20 directions in terms of the type of research that are
21 needed to deal with soil compaction in Ontario?

22 A. No, I don't.

23 Q. I would like to review with you an
24 abstract which is not technical in any way, there are
25 simply some statements in it putting in context some of

1 your views in terms of soil degradation.

2 Madam Chair, it's a paper by --

3 MS. SWENARCHUK: Has this paper been
4 provided to the witness prior to this, Mr. Hanna?

5 MR. HANNA: No, it hasn't, Ms.
6 Swenarchuk. And the reason I didn't provide it to the
7 witness, Madam Chair, is I am not at all intending to
8 go through this paper in any detail whatsoever.

9 I am planning on taking specific
10 statements from an abstract which is not technical in
11 any way whatsoever and simply, as a convenient way - I
12 can read out the abstract and not enter it as an
13 exhibit if it causes Ms. Swenarchuk too much agony -
14 but I can simply read it out and ask this man if he
15 agrees with it, or I can show him the whole thing and
16 ask him, here is the context within which I am asking
17 the questions.

18 I don't care, either way is fine with me.
19 If Ms. Swenarchuk wants to object, I will jsut do it
20 the other way.

21 MADAM CHAIR: You are using this document
22 as a source for the questions you are asking, but the
23 content or the authors' opinions have no bearing?

24 MR. HANNA: Yes, it just puts it in the
25 context in which I am asking the question, but again if

1 it just -- I will read the sentence out of it.

2 MADAM CHAIR: Why don't you just ask the
3 questions, Mr. Hanna. Thank you.

4 MR. HANNA: Q. Are you familiar with the
5 work by Utzig and Walmsley, Dr. Hutchinson?

6 MS. SWENARCHUK: Madam Chair, it has been
7 a well established and, of course, fair process
8 throughout this proceeding that if a witness is to be
9 asked to comment on a publication by any author, that
10 the witness be given the publication in advance to
11 review and certainly that the witness not be obliged to
12 respond to questions on the publication without having
13 ample opportunity to review it.

14 It has been the practice --

15 MR. HANNA: Madam Chair, I was asked not
16 to give long speeches. Ms. Swenarchuk is standing up
17 and giving another long speech on my time. State her
18 objection and let's get over with it.

19 MADAM CHAIR: Mr. Hanna, are you asking
20 Dr. Hutchinson -- are those the names of the authors
21 that you are now asking if he is familiar with that
22 work?

23 MR. HANNA: Simply that question. It was
24 a very simple question. Is this man familiar with the
25 work of Utzig and Walmsley. If he isn't, he isn't.

1 MS. SWENARCHUK: Madam Chair, if I may be
2 permitted to finish my position.

3 If Mr. Hanna wishes to read specific
4 statements to the witness and ask whether the witness
5 agrees or disagrees, that's a fair question in my
6 submission, despite the fact that he has not complied
7 with the usual process used here.

8 If he wishes to ask the general question
9 about Dr. Hutchinson's knowledge of a publication that
10 he has not been permitted to see in advance, it will be
11 my instruction to Dr. Hutchinson not to respond to the
12 question until he has the opportunity to review it.

13 MR. HANNA: I am asking this witness,
14 this expert witness in site degradation and ecological
15 impacts of forest management, if he is familiar with
16 two researchers' work. End of question, no further.

17 MADAM CHAIR: And you are going to go to
18 ask him whether he agrees with their conclusions?

19 MR. HANNA: I am going to read to him
20 certain statements and see if he agrees with it. It
21 doesn't make any difference whether it's from Utzig and
22 Walmsley or whether it's from Mars, it's the same
23 question..

24 I want his opinion on it. I am not
25 asking if he agrees or disagrees with these authors, I

1 am asking does he agree with that statement.

2 MADAM CHAIR: Dr. Hutchinson, are you
3 comfortable agreeing or disagreeing with a statement
4 regardless of the source or the author?

5 THE WITNESS: Well, I will have to
6 obviously judge when I hear it in context, but I will
7 be very happy to attempt to answer it.

8 MR. HANNA: If it makes the witness any
9 easier, pretend it's Mr. Hanna's statements because it
10 doesn't make any difference to me whether it is Mr.
11 Walmsley's statements or whether it's Mr. Hanna's
12 statements.

13 Q. Are you familiar with the work by
14 Utzig and Walmsley, Dr. Hutchinson?

15 A. No, I don't think so. It depends on
16 what the article is, Mr. Hanna.

17 MS. SWENARCHUK: Surely the article could
18 be specified.

19 MADAM CHAIR: Mr. Hanna, would it speed
20 things up, could you possibly continue with your
21 cross-examination and Dr. Hutchinson might look at the
22 article very quickly on the break or will that--

23 MR. HANNA: Madam Chair, this is a --

24 MADAM CHAIR: --break it up?

25 MR. HANNA: --in the teapot. There is

1 nothing do this. I will just make this -- just pretend
2 that Ed Hanna is saying it.

3 MADAM CHAIR: Why do you keep asking the
4 question if he is familiar with those authors. Why
5 don't you just move on and ask him --

6 MR. HANNA: I just want to know what his
7 level of knowledge is with researchers in the field.
8 That's a simple question and I think it is quite
9 appropriate for an expert on the stand.

10 MADAM CHAIR: I think he had just told
11 you he is not familiar with those two researchers.

12 MR. HANNA: I'm trying to move on.
13 That's fine, I have no problem with that. If he
14 doesn't know them, he doesn't know them.

15 Ms. Swenarchuk stood up said and said she
16 wanted to find out more about it.

17 MS. SWENARCHUK: Madam Chair, this is
18 highly irregular given the process of this hearing, and
19 I want to register now for Mr. Hanna in the future that
20 any time that he proposes that a Forests for Tomorrow
21 witness comment on a written publication that we expect
22 him to provide, as other parties have consistently done
23 in this hearing, we expect the paper to be provided to
24 the witness before he goes on the stand for
25 cross-examination.

1 MADAM CHAIR: The Board notes your
2 objection, Ms. Swenarchuk.

3 Go ahead, Mr. Hanna.

4 MR. HANNA: Q. Dr. Hutchinson, do you
5 agree that ground skidding has the greatest potential
6 to impart soil degradation?

7 A. Well, I'm not trying to be awkward,
8 Mr. Hanna, but you would have to put that in a bit more
9 context.

10 Are you saying, does ground skidding
11 cause compaction or can it cause compaction? I can
12 answer those questions.

13 Q. I think the statement is quite
14 simple. Ground skidding has the greatest --

15 A. Greatest potential of what?

16 Q. To impart soil degradation.

17 A. Compact with what, though?

18 Q. Compared to other timber management
19 activities.

20 A. I will make a statement, if this is
21 helpful to you. Ground skidding can cause significant
22 compaction.

23 Q. Are there other activities that cause
24 significantly greater compaction?

25 A. Well, it would depend on how much

1 ground skidding is involved in this. There are many
2 other things that could cause greater than one run with
3 a skidder.

4 Q. I am going to read you a paragraph,
5 and I am not reading you the paragraph for you to
6 comment on it, I am reading the paragraph to put out
7 the types of data I am going to ask you about if they
8 exist for Ontario. I don't want you to comment on the
9 validity of these numbers, I want you to comment on, do
10 we have comparable numbers for Ontario.

11 "Potential reduction of productivity
12 resulting from soil degradation created
13 by forestty practices over the ten-year
14 period, 1976 to 1986, is conservatively
15 estimated at approximately 400,000
16 cubic metres annually. This translates
17 to an annual loss to the provincial
18 economy of approximately \$80-million.
19 A liberal interpretation of available
20 data suggests that the present loss of
21 the provincial economy as a result of
22 forestry practices between '76 and '86 is
23 approximatley \$126-million."

24 Do we have numbers that we could obtain
25 for Ontario that would give comparable estimates?

1 A. Is that an estimate for B.C.?

2 Q. It is an estimate for B.C.

3 A. Right. I don't know whether we have
4 data to produce comparable estimates.

5 Q. You haven't brought anything of that
6 nature forward here to this hearing?

7 A. No.

8 MR. MARTEL: Could I ask what the
9 400,000 -- what was causing the 400,000 cubic metres?
10 Is that from ground skidding, are you talking alone, or
11 all items?

12 MR. HANNA: No, this is all forest --

13 MS. SWENARCHUK: This is the problem, Mr.
14 Martel, we don't the article distributed for all of us.

15 MR. MARTEL: Is this for all or just --

16 MR. HANNA: Mr. Martel, maybe I can
17 answer this in two ways. No. 1, I intend to deal with
18 this in our evidence, so it will be brought forth.

19 As I understand, it is dealing with all
20 forest harvesting techniques.

21 MR. MARTEL: That's all I wanted to know

22 MR. HANNA: Yes.

23 MADAM CHAIR: Mr. Hanna, are you almost
24 finished? This isn't very helpful to the Board. Are
25 you almost finished your questions on compaction?

1 MR. HANNA: No, Madam Chair, I'm not even
2 close.

3 MADAM CHAIR: Well, this isn't helpful to
4 the Board, Mr. Hanna. We've heard from Dr. Hutchinson
5 that he is not setting himself up as an expert on
6 compaction.

7 Are you intending to go through all these
8 questions in Panels 3 and 5 as well on compaction with
9 people who are to be more expert in this area than Dr.
10 Hutchinson?

11 MR. HANNA: Well, Madam Chair, I hear
12 clearly what you are saying and my initial reaction was
13 to move on, not deal with soil compaction, and I asked
14 the witness if he had any opinions to provide and if he
15 felt that he had reasonable opinions to present and he
16 said yes. He has also dealt with it in his witness
17 statement.

18 MADAM CHAIR: He has dealt with it in a
19 very cursory fashion in his witness statement.

20 MR. HANNA: I guess the questions is
21 then, Madam Chair, does that mean we don't test those
22 comments?

23 MADAM CHAIR: No, I think if you have
24 some very direct questions that are relevant to the
25 specific points that Dr. Hutchinson raised in his

1 witness statement I think that would be helpful, but so
2 far this has not been a helpful exercise for the Board.

3 MR. HANNA: Madam Chair, I guess I have
4 to explore this because I'm not sure I understand why
5 it is not helpful.

6 MADAM CHAIR: It is not helpful because
7 you are not giving us any information, Mr. Hanna.

8 We have a witness in front of us who has
9 said he is not an expert in soil compaction and why
10 should we spend the two hours you have to cross-examine
11 listening to his views on soil compaction when he has
12 raised a number of very important matters that I think
13 your party is deeply concerned about in other parts of
14 the witness statement.

15 MR. HANNA: All right. Let me proceed
16 this way then, I think I understand now what you are
17 saying to me.

18 Q. Dr. Hutchinson, are you and expert in
19 soil compaction?

20 A. No.

21 MR. HANNA: Madam Chair, I'll move on.

22 MADAM CHAIR: Thank you, Mr. Hanna.

23 MR. HANNA: Madam Chair, just before I
24 do, I want make sure that I don't close a door that I
25 inadvertently --

1 MADAM CHAIR: The door is open wide open,
2 Mr. Hanna. You can bring these questions back with
3 Forests for Tomorrow's experts on soil compaction.

4 MR. HANNA: That's the question. There
5 are interrogatory responses that been raised and there
6 are statements made in this witness statement I would
7 like to test with subsequent witness.

8 MADAM CHAIR: And you can certainly do
9 that.

10 MR. HANNA: Thank you, Madam Chair.

11 Q. Well, let's talk about fire, Dr.
12 Hutchinson. You are an expert on fire and its impact
13 in terms of forests; is that correct?

14 A. I'm familiar with fire, yes.

15 Q. That didn't answer my question.

16 A. Well, you better define what you mean
17 by an expert and I'll tell you. I think I'm qualified
18 to talk to you about the effects of fire on boreal
19 forest ecosystems.

20 Q. But you aren't qualified to talk
21 about soil compaction? I just want to make sure. I
22 don't want any, as I say, doors left open here.

23 A. Let me just explain how I see these
24 sort of compaction questions you are asking.

25 One aspect is the mechanical aspect of

1 soil compaction; that is, the degree to which it
2 occurs, which is kind of -- you know, it's an
3 engineering type of thing. The other thing is, what
4 are the consequences of these effects.

5 Now, I think I am qualified to talk about
6 the consequences of soil compaction and I'm certainly
7 qualified to talk about the effects of forest fires.

8 Q. Will there be a subsequent witness,
9 Dr. Hutchinson, who is better qualified to talk about
10 the effects of soil compaction?

11 A. I do believe so, yes.

12 MS. SWENARCHUK: This is not a question
13 for Dr. Hutchinson.

14 MR. HANNA: He has already answered the
15 question, Madam Chair.

16 MS. SWENARCHUK: This is a question
17 for counsel who are responsible for the case.

18 MADAM CHAIR: You have already told us
19 there will be witnesses in Panel 3 and 5, Ms.
20 Swenarchuk. Thank you.

21 MR. HANNA: Q. But in terms of fire, you
22 are the person that I should ask those questions to.
23 There isn't someone coming down the line that --

24 A. Well, if they are related to my
25 witness statement, yes.

1 MS. SWENARCHUK: Well, once again --

2 THE WITNESS: If it is something totally
3 different --

4 MS. SWENARCHUK: Mr. Hanna has the expert
5 witness statements. Panel 3 particularly also has
6 evidence with regard to fire impacts, as does witness
7 statement No. 1.

8 MADAM CHAIR: I think, Mr. Hanna, we have
9 heard evidence from Dr. Hutchinson on the impacts on
10 fire on regeneration and so forth and I think that you
11 could ask him questions about that.

12 MR. HANNA: Thank you, Madam Chair.

13 Q. Now, it is witness statement 1A that
14 deals with the fire interactions; is that correct?
15 That's where it is substantially dealt with?

16 A. That's correct.

17 Q. Now, as I understand the thesis of
18 this -- of witness statement 1A, you are of the view
19 that the impacts on forest growth and succession of
20 fire are significantly different than clearcuts; is
21 that correct?

22 A. Yes.

23 Q. Now, I want to say -- I want to start
24 with an assumption and say, let's accept that you are
25 correct for right now, okay, that there is a

1 significant difference between fire and clearcutting.

2 So what?

3 A. So what what?

4 Q. What is this Board supposed to
5 conclude from that? What change in the timber
6 management planning process, what is it that we should
7 conclude if you're right? What actions should we take?

8 A. Well, fires in the boreal forest is
9 quite a significant natural event that occurs there.
10 It has been pointed out innumerable times from the
11 Ministry of Natural Resources certain species are
12 adapted to come in following the fire, some of them are
13 adopted to survive it.

14 It creates a certain type of site
15 preparation, seed site preparation, it has certain
16 effects on nutrient status and on of sites.

17 Q. That's a good description of the
18 summary of your witness statement, but that doesn't
19 answer my question. So what? What do we do?

20 A. I always find "so what" a rather
21 difficult question to answer.

22 Q. Well, it's a critical question to
23 answer because that's the question that this Board is
24 faced with answering in terms of what do we in the
25 timber management planning process if we find that your

1 thesis is correct. What do we do?

2 A. What do we do?

3 Q. Yes.

4 A. Well, we might, for example, decide
5 that there should be some limitation on the size of
6 clearcuts.

7 Q. And the reason we would conclude
8 that?

9 A. Well, we've had a lot of debate over
10 the last few days in the witness stand here on what
11 natural size fires versus what -- well, what the size
12 of fires are.

13 Q. Yes, you deal with that in your
14 witness statement, I understand that.

15 Are you suggesting then that because the
16 natural fire is - I forget, I think you said ten
17 hectares or around that size - the natural fire is ten
18 hectares, that therefore the clearcut size should be
19 ten hectares?

20 A. No, we actually make quite different
21 recommendations to that.

22 Q. Okay. What should I conclude?

23 A. I'm sorry, Mr. Hanna, can you ask the
24 question? What should you conclude about what?

25 Q. About timber management planning in

1 this province. What actions should I take in terms of
2 timber management planning? If your thesis is proven
3 correct, what actions should we take?

4 A. Well, perhaps you might need to
5 rethink it if you think it's a critical feature of
6 timber management at the moment.

7 Q. Rethink?

8 A. How it's done.

9 Q. Dr. Hutchinson, you are the expert,
10 you are the man who has developed an opinion and come
11 forward here before this Board at public expense to
12 give that view.

13 What are you telling this Board? How
14 should they rethink the process? What is it you want
15 to see happen?

16 A. Right.

17 MS. SWENARCHUK: Well, Madam Chair, as
18 you aware, we filed this morning Forest for Tomorrow's
19 silvicultural prescriptions portion of the revised
20 terms and conditions that we will be seeing later.

21 Perhaps Mr. Hanna would like to review
22 those prescriptions and direct questions to them
23 specifically.

24 MR. HANNA: Madam Chair, is this witness
25 going to be recalled once that has taken place?

1 MADAM CHAIR: No.

2 MR. HANNA: I have no option but to deal
3 with what I have before me at the present time and what
4 I have before me at the present time is a witness
5 statement.

6 Q. Dr. Hutchinson --

7 MS. SWENARCHUK: Madam Chair, I must
8 object to that process if it is going to occur here or
9 any time in our case.

10 This is not what any judicial process in
11 this province can allow to have happen. The process is
12 simply too expensive. People who operate within it
13 must operate on a certain level of knowledge and the
14 most basic knowledge for someone who is going to
15 conduct a cross-examination is to be aware of what the
16 witness has said in direct testimony.

17 We were asked by the Ministry of Natural
18 Resources what terms and conditions this evidence would
19 support, we produced them this morning. They have been
20 discussed, they are available for all parties.

21 I suggest to you, Madam Chair, Mr.
22 Martel, that it is not in the interest of the Board or
23 any of us to prolong these proceedings by constant
24 repetition of something that has been presented
25 previously in evidence.

1 MR. HANNA: Madam Chair, we have a
2 classic example of a double standard that Ms.
3 Swenarchuk seems to use so often.

4 I can't introduce a document because
5 witness who is an expert hasn't had enough time to
6 review it, Ms. Swenarchuk introduces a document this
7 morning and expects me to develop my cross-examination
8 around a document that she sought fit to introduce this
9 morning. I have no choice, Madam Chair, but to
10 continue with the witness statement and the material I
11 have before me.

12 MADAM CHAIR: Mr. Hanna, if the Board
13 thinks that we can speed things up by quickly reviewing
14 for you pieces of information that we have had already
15 in evidence, then we will do that.

16 And I would just make one comment with
17 respect to Mr. Hutchinson and that is a message that
18 came out of his direct evidence with respect to the
19 comparison of the effects of fire and timber
20 operations, is the point that he touched on a few
21 minutes ago and I think his main message to the Board
22 was that the size of clearcut is a direct outcome in
23 the way that he is thinking about fire.

24 He believes that fire areas are smaller
25 rather than larger and that it's better for clearcuts

1 generally to be smaller rather than larger, and that
2 was a major conclusion of his and he said that in
3 response to your question.

4 MR. HANNA: I've got that very clear from
5 the witness statement, Madam Chair.

6 MADAM CHAIR: Where do you want to take
7 it from there?

8 MR. HANNA: The question is, how small.
9 That was the question I just put to him, was he said in
10 his witness statement exactly - I think you said it
11 very well, Madam Chair - one of the basic messages he
12 brought forward in terms of fire.

13 My question is: What specifically does
14 this witness want to see in terms of the size of
15 clearcuts? What conclusion are we supposed to draw
16 from this analysis?

17 MADAM CHAIR: Dr. Hutchinson, can you
18 revisit very quickly the numbers of hectares that you
19 gave us during various bits of your evidence?

20 THE WITNESS: For jack pine, the
21 recommendation from FFT was 100 hectares.

22 MR. HANNA: Q. I'm for your opinion,
23 not FFT's opinion.

24 A. One hundred hectares.

25 Q. Okay. There is a lot more than jack

1 pine in the boreal forest.

2 A. Right. For black spruce, the
3 recommendation was that the cuts be of substantially
4 smaller size, but that they be of no more than two tree
5 lengths, two tree heights in diameter.

6 Actually, I can review these if you want.
7 I can dig them out and go through some of them with
8 you. Let me just read a few of the --

9 Q. You said substantially smaller. Can
10 you give me a number?

11 A. Yes, I will give you exactly the
12 wording.

13 MADAM CHAIR: Dr. Hutchinson is reading
14 from Forests for Tomorrow's terms and conditions and
15 those are based on some of Dr. Hutchinson's testimony.

16 MR. HANNA: Madam Chair, I think it is
17 also appropriate to put on the record that I feel that
18 this tactic of introducing this kind of material at the
19 11th hour is totally inappropriate, and I just have to
20 reiterate that. I think it's imperative that's on the
21 record.

22 This is not giving me any time to review
23 this with any of my -- with my client or any of the
24 expert advisors we have working for us and I just feel
25 this is inappropriate.

1 MADAM CHAIR: We are not expecting you to
2 have reviewed it, Mr. Hanna. We simply want you to
3 know that there is a direct relationship between what
4 Dr. Hutchinson's evidence is and this few pages of
5 excerpt from draft terms and conditions that haven't
6 been released yet.

7 MR. HANNA: Q. Yes, Dr. Hutchinson?

8 A. Well, under silvicultural standards,
9 this is for the black spruce working group, for mature
10 black spruce stands with distinct forest vegetation and
11 soil conditions, including various degrees of jack
12 pine, as described for the FEC Clay Belt, FEC
13 northwestern Ontario, northwestern Ontario forest
14 ecosystem interpretations, harvesting shall be by strip
15 cutting, patch cutting or block cutting in regular or
16 irregular shape. In all cases, no more than 50 per
17 cent of the total stands should be removed in the
18 initial cut.

19 Q. I'm sorry, I got interrupted there?

20 A. No more than 50 per cent of the total
21 stands should be removed in the initial cut. The width
22 of openings, this is a key but perhaps for you, the
23 width of openings should not exceed twice the height of
24 the trees. Before the final cut occurs on these areas,
25 adjacent cut-over areas must be producing viable seed,

1 and then there is various other...

2 In black spruce types, ten hectares in
3 size.

4 Q. Just a second. That was -- what did
5 you just give me?

6 A. That was black spruce working group.

7 Q. And now you are giving me...?

8 A. This is continued.

9 Q. This is still part of black spruce,
10 I'm sorry. It's ten hectares?

11 A. You don't want to me read it all; do
12 you?

13 Q. No. Just ten hectares, I just want
14 to --

15 A. Yes, 10 hectares is the...

16 Q. Now, is that a standard?

17 A. That's a recommendation.

18 Q. No. Do you understand the difference
19 between a guideline and a standard?

20 A. This is a standard.

21 Q. So that that's a maximum limit?

22 A. Mm-hmm.

23 Q. Okay. And the maximum limit for
24 black spruce is ten hectares?

25 A. Mm-hmm.

1 Q. And that's comparable to the average
2 size of forest fires that you calculate in your witness
3 statement?

4 A. Is it?

5 Q. Yes.

6 A. Well, I introduced some other
7 evidence on it. The average size of fires from year to
8 year varies of course, but a hundred hectares is the
9 size for jack pine.

10 Q. No, I heard that. Let's just deal
11 with them one at a time. We've got black spruce, ten
12 hectares?

13 MS. SWENARCHUK: Excuse me.

14 THE WITNESS: No, that's not entirely
15 correct.

16 MS. SWENARCHUK: Perhaps Dr. Hutchinson
17 could have the opportunity to read the entire paragraph
18 in which the ten hectares are referred to to clarity
19 that.

20 THE WITNESS: Okay.

21 "On black spruce sites classified as
22 unstable, fragile, sensitive with exposed
23 bedrock, generally designated as
24 protection forest reserves, the width
25 should not exceed one and a half times

1 the height."

2 Presumably, the thinking there is that
3 the seeds -- seed range, if you like, may not be
4 adequate to maintain the two widths.

5 "In all black spruce stands with some
6 mixture of jack pine allowed, progressive
7 three-coup system shall be used. The
8 last strip shall be harvested only if the
9 adjacent strips have produced viable
10 seed."

11 Now we come to the ten hectare bit:

12 "In black spruce types below ten hectares
13 in size, the two-coup alternate strip
14 cutting shall be conducted. The time and
15 stocking and seed requirements in the
16 cut-over are the same as above."

17 MADAM CHAIR: Mr. Hanna, do you have a
18 copy of these five pages?

19 MR. HANNA: No. Ms. Swenarchuk,
20 unfortunately, didn't provide me with a copy of it.

21 MADAM CHAIR: Mr. Pascoe, could you --

22 MS. SWENARCHUK: Nor were we asked.

23 MADAM CHAIR: Thank you, Mr. Greenwood.
24 Could you loan Mr. Hanna a copy and we will get you a
25 copy by the end of the afternoon.

1 MR. HANNA: Q. Now, the ten hectares
2 that you just described is term of black spruce is
3 comparable to the ten hectares average size that you
4 report in your witness statement; is that correct?

5 A. Well, if that's what it says in the
6 witness statement, then that would be correct.

7 MS. SWENARCHUK: Could we just clarify
8 this. The ten hectare reference in the terms and
9 conditions refers to the size of the original black
10 spruce stand that is cut and to the requirement that
11 stands of that size be cut with a two-coup alternate
12 strip cutting system.

13 If Mr. Hanna is suggesting that Dr.
14 Hutchinson has referred to ten hectares in some context
15 in his witness statement, the fair procedure would be
16 for him to refer Dr. Hutchinson to the section of the
17 witness statement to which he is referring so that we
18 can see the context in which ten hectares is discussed.

19 MR. HANNA: Q. Dr. Hutchinson, I am
20 looking it here -- it says, in black spruce types below
21 ten hectares in size a two-coup, so what you are saying
22 is, it isn't necessarily a ten hectare clearcut size
23 for black spruce?

24 A. Mm-hmm.

25 Q. What is the standard for a clearcut

1 size of black spruce?

2 A. I don't think you'll see there is any
3 standard set -- suggested there.

4 Q. Where is the standard for jack pine?

5 A. On the next page. The important
6 thing about the black spruce is the width of the cut,
7 the purpose being to allow as much of -- the overall
8 guidelines were to allow as much natural revegetation
9 as possible.

10 Q. And with jack pine, the rationale was?

11 A. The jack pine, that a hundred
12 hectares -- well, because of the conditions of jack
13 pine stands after fire, a hundred hectares is
14 considered a reasonable size to have.

15 Q. But it's that reasonableness I am
16 trying to explore. Why is it reasonable?

17 A. Why is it reasonable?

18 Q. Explain to me why it was reasonable
19 for black spruce? You were trying to encourage as much
20 natural regeneration as possible and that's why the
21 width of the strips was important; correct?

22 A. Mm-hmm.

23 Q. What is the rationale for a hundred
24 hectares on jack pine?

25 A. Well, one is most successful to

1 replanting jack pine. Jack pine, if you like, is
2 somewhat easier to revegetate into size.

3 Q. Why why not a thousand hectares?

4 A. Well, I consider that excessive.

5 Q. Why?

6 A. Why is a thousand hectares --

7 Q. Mm-hmm.

8 A. Do you want to stop at a thousand or
9 move it up a bit?

10 Q. My role here, Dr. Hutchinson, is to
11 understand the reasoning behind the proposition you are
12 putting forward, and I want to understand why you
13 stopped at a hundred and you didn't go to a thousand or
14 why you didn't go to 50 instead of a hundred?

15 A. Well, a hundred is large sized cut, a
16 hundred hectares, and we have some concerns that as
17 cuts get larger that we move away from some of the
18 advantage of smaller cuts in terms of site
19 rehabilitation.

20 Q. What type of predictive analysis did
21 you undertake to conclude that a hundred hectares was
22 the most reasonable size?

23 A. Well, the average size of fires, if
24 you really want something that would fit into that, for
25 the last ten years is about 92 hectares for the

1 province.

2 Q. So now we have gone full circle right
3 back to where I started and that was, you looked at the
4 size of the fires under the natural conditions and that
5 was the primary basis upon which you arrived at the
6 conclusion?

7 A. No, there's many other things gone
8 into that.

9 Q. Okay. What predictive analysis did
10 you undertake to arrive at that conclusion?

11 A. You are going to have to ask other
12 people, I'm afraid, Mr. Hanna, because I have simply
13 provided some advice based on my concerns about natural
14 regenerative processes, about nutrient losses and
15 things of this kind which is in my witness statement.

16 Now you are asking me questions on
17 silvicultural prescriptions which have been developpe by
18 a number of people. You are asking me questions on
19 something you haven't seen before and now you want me
20 suddenly to be able to provide them.

21 I imagined I was going to be dealing with
22 my witness statement with you.

23 Q. Well, that's an interesting
24 statement, Professor Hutchinson. Are you suggesting
25 then that this term and condition has nothing to do

1 with your witness statement?

2 A. No, it's obviously -- it relates to
3 it in several ways.

4 Q. As I understand your witness
5 statement, your witness statement is providing
6 scientific information to this Board as a basis to
7 justify certain terms and conditions that your client
8 - will bring forward and has suddenly brought forward in
9 a piece.

10 Now, I am asking you, looking at that
11 term and condition, what analysis have you undertaken
12 end in your witness statement or elsewhere to support
13 that conclusion?

14 A. Okay. Well, here would be one
15 analysis. Mr. Hanna, this is the average size of fires
16 that's been provided by Ministry of Natural Resources
17 for the years 1917 to 1987.

18 Q. So we are back to where I started and
19 that was the average size of fire is the one predictive
20 analysis taht you have undertake to support the hundred
21 hectares. Is there other analysis?

22 Have you predicted with larger size
23 clearcuts you'll greater evapotranspiration and greater
24 drying out of the site?

25 A. We have been through a great deal of

1 that, yes.

2 Q. . You have done that in a predictive,
3 quantitative way?

4 A. Well, it would depend on sizes of
5 watersheds and things of this kinds.

6 Q. Okay. But -- see, there is the
7 essence of what I'm asking you, Dr. Hutchinson.

8 This is a standard that you are proposing
9 to apply across the area of the undertaking and now you
10 just told me: Well, it contrary varies?

11 A. No, I haven't said that. The
12 standard doesn't vary. I'm saying --

13 Q. You said the rationale for it will
14 vary, Dr. Hutchinson, or maybe I didn't understand you.

15 A. Maybe you didn't.

16 Q. Well, does the rationale vary across
17 the area of the undertaking or doesn't it?

18 A. Does the...

19 Q. Rationale for the hundred hectares
20 vary across the area of the undertaking or not?

21 A. No. The area of the --

22 Q. Okay. Good. I beg your pardon?

23 A. I said, the area of the undertaking
24 varies, not the rationale. There's variability across
25 the area of the undertaking.

1 Q. And I have asked you, what predictive
2 analysis did you undertake to justify the hundred
3 hectares and you indicated to me it will vary upon the
4 watershed, as an example?

5 A. Mm-hmm.

6 Q. Does watershed vary across the area
7 of the undertaking?

8 A. Yes.

9 Q. So the rationale has to vary?

10 A. No.

11 Q. Okay. Tell me then the relationship
12 between watershed and the hundred hectares that you are
13 proposing?

14 A. The watershed is not part of the
15 hundred hectares, Mr. Hanna.

16 MR. HANNA: Madam Chair, I must be really
17 losing it because unfortunately I feel this witness is
18 just not answering the questions and I don't know what
19 to do. I will keep persisting, but I just want to put
20 on the record that we are not getting responses to
21 questions.

22 MADAM CHAIR: I think, Mr. Hanna, that
23 Dr. Hutchinson is trying to answer the question. I
24 guess the question you have asked is phrased in such a
25 way he could almost read whole parts of his witness

1 statement again. Could you just take it apart a little
2 bit.

3 Where are you going with this question?

4 MR. HANNA: Madam Chair, as I said right
5 at the very outset of this cross-examination, I feel
6 that the purpose of my being here today and to assist
7 you as the Board is to try to take the expert opinion
8 this man is bringing forward and put that in a context
9 that has some meaning in terms of final terms and
10 conditions, a decision.

11 I am trying to look to this man, I have
12 now a specific term and condition, and I am asking him:
13 What scientific basis did he use to predict and analyse
14 alternate clearcut sizes and to arrive at a hundred
15 hectare standard to apply across the area of the
16 undertaking.

17 That seems to me to be a very relevant
18 and pertinent question and very pertinent to the
19 information this man has brought forward.

20 MADAM CHAIR: Well, Mr. Hutchinson has
21 responded that he thinks the size of fire area was an
22 important determinant in arriving at a hundred
23 hectares.

24 Do you have other reasons for arriving at
25 the hundred hectare size for jack pine, Dr. Hutchinson?

1 THE WITNESS: No, I think I will leave it
2 at that.

3 MADAM CHAIR: Okay.

4 MR. HANNA: Q. Are you suggesting then
5 to this Board that in timber management the objective
6 should be to replicate nature?

7 A. I will read out what I am suggesting.
8 Within the limits of -- you have got it there actually,
9 Mr. Hanna. If you look at terms 1(b), that would
10 express the sentiment that I have about it:

11 "Simulate or we gather by natural
12 ecological processes to the greatest
13 possible extent in which to minimize or
14 prevent any ecological disruptions and to
15 achieve maximum stability of the stands."

16 Q. So can I take from that, then, that
17 in your view the only way to achieve stability of stands
18 and to avoid - how should I say - ecological
19 disruptions is to mimic ecological processes?

20 A. Yes.

21 Q. You can't do better than nature?

22 A. I certainly think we should be
23 managing as closely in harmony with natural processes
24 as possible.

25 Q. No, but that wasn't my question. Can

1 we do better than nature or do we simply say nature on
2 average burns ten hectares and, therefore, that's the
3 size that we should direct our clearcuts?

4 A. You have asked me two questions
5 there. First, can we do better than nature. Generally
6 no.

7 The second one, has nature arranged that
8 the -- what did you say the question was? It was
9 something like burns a hundred hectares, therefore we
10 should do this.

11 Q. Correct.

12 A. Well, we are trying to set some kind
13 of size on clearcuts because we feel that very large
14 clearcuts have some adverse effects and we have come up
15 with this number in this silvicultural prescription of
16 one hundred hectares for jack pine.

17 There will be circumstances, of course,
18 in which -- once we have done some harvesting, then we
19 are left with the problem of rehabilitation of the site
20 and we think it should be general guidelines as natural
21 to natural systems as possible.

22 Q. But if we wanted it to be similar to
23 natural processes, we don't have every fire a hundred
24 hectares. We have got lots of fires that are over a
25 hundred hectares.

1 Why wouldn't we have fires over a hundred
2 hectares if we want to replicate the natural process?
3 Why wouldn't we have clearcuts larger than a hundred
4 hectares if we want to replicate natural processed?

5 A. Why wouldn't we have clearcuts larger
6 than a hundred hectares? Because it's the standard.

7 Q. I don't disagree it is the standard,
8 but that doesn't answer my question. You told me you
9 can't do better than nature and we should replicate
10 nature to the greatest extent possible.

11 The statistics that you have referred to
12 have many fires that are well over hundred hectares,
13 well over a thousand hectares, well over a hundred
14 thousand hectares. Why shouldn't we have clearcuts
15 that big?

16 A. I don't think, from the figures
17 produced, that many fires are over a hundred thousand.

18 Q. We've got some, though.

19 A. Some, yes.

20 Q. So we should have some clearcuts over
21 a hundred thousand hectares?

22 A. That's certainly not my opinion.

23 Q. Okay. Why not?

24 A. Because those are -- you see, the
25 assumption you are making is that clearcutting and fire

1 are exactly the same and we are saying, no they're not.

2 Q. I am not making the assumption, you
3 are, Dr. Hutchinson.

4 A. No, I'm not.

5 Q. You are saying that --

6 A. No, you are saying --

7 Q. Dr. Hutchinson, you've just told me
8 that the rationale for the hundred hectares standard
9 was -- the reason was because it replicated the size,
10 the average size of fires?

11 A. Mm-hmm.

12 Q. That's your implication, not mine.

13 A. Mm-hmm.

14 Q. Now, why should we not have larger
15 clearcuts?

16 A. Well, we are moving towards rarer and
17 rarer events. That would be one rationale for it.

18 Q. So we should express the standard in
19 terms of the frequency of clearcut sizes?

20 A. That would be another interesting way
21 of looking at it, yes.

22 Q. Let me come at it from a different
23 point of view.

24 Will you agree that an essential element
25 of management, timber management, resource management,

1 any management is to manipulate ecosystems such that
2 significant specific goals and objectives can be
3 accomplished?

4 A. Is that a question?

5 Q. Yes.

6 A. Right.

7 Q. Is that yes you would agree?

8 A. Yes.

9 Q. Okay. So then the essence is to
10 decide what those goals and objectives are and then see
11 how we can move towards then and those goals and
12 objectives, one of them, may be to minimize the risk to
13 ecological disruption?

14 A. Right.

15 Q. Now, to move towards those goals, one
16 has to undertake some sort of predictive analysis;
17 correct? One has to say: If I do this, this is what
18 the consequences may be?

19 A. I would hope that would be done, yes.

20 Q. And that's not implicit in a
21 standard, in fact a standard somewhat violates that,
22 doesn't it, because once you have the standard you no
23 longer predict, you meet the standard?

24 A. There is an illogicality in what you
25 are saying.

1 Q. Okay. What is it?

2 A. Well, you've said, we will decide to
3 set some goals and objectives. We, of course, will
4 have no idea what they are, you haven't said for what
5 species, you haven't said for what circumstances, and
6 then you say once you've a standard you've violated
7 your goals and objectives.

8 Now, you tell me how that follows
9 logically because I can't see it.

10 Q. What prediction is contained in terms
11 of goals and objectives in a standard of a hundred
12 hectares?

13 A. What prediction is contemplated?
14 Well, that we could successfully revegetate it, that
15 this would maintain sustainability of the forest
16 ecosystems, that it would be a step forwards
17 maintenance of the variety of forest ecosystems, that
18 it would provide supply of wood for the pulp and paper
19 industry.

20 Q. Are you saying that that's the case
21 on all sites in all areas in the undertaking and that
22 for all alternative clearcut sizes that is only
23 conclusion that you would reach?

24 A. No, what this says is that's the
25 maximum size.

1 Q. You didn't -- back to the question of
2 larger clearcuts.

3 A. Well, if that's the maximum size --

4 Q. Could I not achieve what you've just
5 said with larger clearcuts in some circumstances?

6 A. Could you not achieve...?

7 Q. All the things that you have just
8 listed.

9 A. Mm-hmm.

10 Q. Was that a yes?

11 A. I think I have got to accept that you
12 could have somewhat different sizes, but if you have a
13 standard you have a standard.

14 Q. Now, back to what I was asking you.
15 Because you don't explicitly set out an objective and
16 then test that objective with a particular approach
17 with a standard, you are violating that link?

18 A. No, I'm not violating the link.
19 These prescriptions from FFT, one of the main concerns
20 obviously will be ecological concerns, but it's also
21 recognized that there is multiple uses of the forest
22 and that those are very important and that includes
23 timber extraction.

24 Q. Now, I thought you had agree with me
25 that it's prudent in management to develop and use

1 predictive, quantitative tools to forecast things such
2 as forest growth and succession. Do you agree?

3 A. Yes, I think that will be a useful
4 thing to be doing.

5 Q. Okay. Now, maybe we are saying the
6 same thing, Dr. Hutchinson, and just coming at it from
7 different angles.

8 How do you see using predictive tools,
9 goals and objectives in tandem with the standard?

10 A. Well, for management areas, you have
11 got to set out a harvesting pattern which would provide
12 significant timber flow with hundred hectare cuts.

13 I wouldn't be enthusiastic about having
14 several hundred hectare cuts adjacent to each other to
15 achieve a thousand hectares because I think that the
16 area in between is important, too.

17 Q. Let's look at it this way. Say, for
18 instance, I was to develop a tool and it was used to
19 predict the impact on forest succession, community
20 stability, diversity, whatever terms we feel are
21 appropriate and we apply that tool at a specific forest
22 and we went find in that specific forest that if we go
23 and clearcut over 50 hectares we've have a problem in
24 terms of achieving specific goals and objectives that
25 have been established. Is that reasonable?

1 A. Well, it may be reasonable, yes.

2 Q. Is that a reasonable process, not
3 conclusion? Is it a reasonable process?

4 A. Is it a reasonable process to
5 determine what the appropriate size of cut would be for
6 your particular habitat?

7 Q. To analyse each cut on that sort of a
8 basis, yes.

9 A. Well, that would be quite difficult
10 actually.

11 Q. Why is that?

12 A. Well, actually, to tell you the
13 truth, Mr. Hanna, I am not quite sure if I am following
14 the general line of your argument.

15 You seem to be wanting to apply
16 management goals, goals and objectives, and then ask
17 how ecologically this fits in with a standard of a
18 hundred hectares. Is that the drift?

19 MR. SWENARCHUK: Perhaps it would be
20 helpful, Madam Chair, if Mr. Hanna would restate the
21 exact question he is asking Dr. Hutchinson to answer.

22 MADAM CHAIR: Mr. Hanna, the Board is
23 getting ready for its afternoon break. Would you like
24 to take a few minutes now?

25 MR. HANNA: Certainly, Madam Chair.

1 How late are we sitting until tonight?

2 MADAM CHAIR: We sit until four.

3 MR. HANNA: I take it that will be fixed
4 tonight?

5 MADAM CHAIR: Yes.

6 MR. HANNA: Despite the interventions and
7 other problems I've had in getting this far in my
8 cross.

9 MADAM CHAIR: Well, you came prepared to
10 finish at four o'clock.

11 MR. HANNA: Fine, Madam Chair.

12 MADAM CHAIR: The Board will be back in
13 15 minutes.

14 ---Recess taken at 2:45 p.m.

15 ---On resuming at 3:00 p.m.

16 MADAM CHAIR: Please be seated.

17 MR. CASSIDY: I don't see Ms. Seaborn in
18 the room, Madam Chair.

19 MADAM CHAIR: She's on the telephone.

20 Go ahead, Mr. Hanna. That's fine, yes.

21 MR. HANNA: Q. Dr. Hutchinson, just
22 before we pick up where we left off, I just want to ask
23 you a question. Have you read Exhibit 1125 which is
24 the terms and conditions of the Ontario Federation of
25 Anglers & Hunters?

1 A. No, I don't think I have.

2 Q. Okay. We were back at the point of
3 talking about fire and clearcuts and the size of
4 clearcuts and the standard versus predictive
5 approaches. Do you remember that?

6 A. Mm-hmm.

7 Q. And I was putting to you, of you
8 will, another paradigm, another way to come about this
9 issue of trying to determine the appropriate size of
10 clearcuts, and the paradigm was putting to you was one
11 that has been presented to this Board by Gordon
12 Baskerville. Have you read Baskerville's writings?

13 A. I have read some of them, yes.

14 Q. Have you read his paper entitled
15 Adaptive Management, Wood Availability, Habitat
16 Availability which he sets out the adaptive management
17 framework?

18 A. What was that published in?

19 Q. It was published in Panel 8 of the
20 Ministry of Natural Resources' witness statement, it
21 was also published in the Forestry Chronicle?

22 A. No, I don't think I have.

23 Q. Are you familiar with the adaptive
24 management approach?

25 A. If you tell them about it, I'll...

1 Q. Well, it's a yes or no. If you are,
2 you are; if you aren't, you aren't.

3 A. It doesn't ring any bell with me at
4 the moment.

5 Q. In developing your advice that's
6 contained in Exhibit 1416, did you consider alternate
7 ways to specify the size of clearcuts other than by a
8 standard?

9 A. Well, you will see it is done in fact
10 that way. There is a whole series of recommendations
11 or standards set out for different species and
12 different circumstances.

13 Q. Dr. Hutchinson --

14 A. The only one we have focused on is
15 the hundred acre -- hundred hectare one for jack pine.

16 Q. Dr. Hutchinson, with the greatest
17 respect, you didn't listen to the question.

18 The question was: Did you consider
19 alternate approaches to determining clearcut sizes
20 other than setting standards?

21 A. No.

22 Q. Now, you've told me that you feel
23 that it would be a responsible approach to undertake
24 predictive analysis in terms of specific goals and
25 objectives as part of developing clearcut sizes, among

1 other things; correct?

2 A. Mm-hmm.

3 Q. And before the break I had asked you
4 if you felt that this was something that should be
5 undertaken as a regular part of the timber management
6 process, and you said that would be extremely
7 difficult. I asked you why, and then all of a sudden
8 we went on one of our favourite whirl winds and we
9 never got back to the question and Ms. Swenarchuk asked
10 me to restate it. I have now restated it. Why?

11 A. I'm sorry to do it to you, but can
12 you restate it again, just put it to me right now?

13 There is too much verbage around the
14 question, Mr. Hanna. I have difficulty picking the
15 question up. Just give me the question and I will try
16 and to answer it.

17 Q. I had asked you if we should apply
18 predictive models, analytical tools, whatever you want
19 to call them, relating to the specific goals and
20 objectives in timber management plans as a routine
21 basis to evaluate alternative -- I will call them
22 silvicultural regimes but that include clearcut sizes
23 and you said no, and I asked why not. Why not?

24 A. Okay. So the question seems to be
25 whether we should be continuously analysing and trying

1 to assess the size of cuts and management silvicultural
2 regimes.

3 Q. Or we should be forecasting.

4 A. Of course we should be forecasting.

5 Q. Should we be doing it on a routine
6 basis?

7 A. Routine basis.

8 Q. Like we do with allowable cuts?

9 A. Well, yes.

10 Q. So then we should undertake this type
11 of analysis on a routine basis, evaluating the
12 implications of alternate cut sizes and configurations
13 and looking at that, predicting what the outcome will
14 be in terms of goals and objectives and the types of
15 goals and objectives that you described before the
16 break? We should be doing that?

17 A. We should be doing this all the time,
18 are you suggesting?

19 Q. As part of the timber management
20 planning process?

21 A. Well, it certainly should be done,
22 but it's the question of how often and frequently. I
23 mean, should everyone's life be consumed with this all
24 the time.

25 Q. Timber management plans are produced

1 every five years. Is that too frequently?

2 A. Well, it has many things, but
3 certainly that aspect of it should be looked at.

4 Q. Sorry, I don't know whether that's a
5 yes or a no.

6 A. It's a neither. It's the appropriate
7 thing to be included in assessments of timber
8 management.

9 Q. That sounds like a yes?

10 A. Fine.

11 Q. Okay. Now, you have described for
12 us - and I didn't write them all down, but I can
13 remember some of them - some of the things that we
14 should consider in analysing cut patterns.

15 You mentioned stability and I think you
16 mentioned diversity and various other factors?

17 A. Right.

18 Q. Forest succession, et cetera. What
19 operational, predictive tools would you suggest that
20 this Board incorporate in the timber management
21 planning process to deal with your concerns?

22 A. Well, I think the requirements are
23 that we match up as closely as we can to natural
24 processes. This is one of the underlying themes of the
25 standards, recommendations that are being made by FFT.

1 They are ones with which I can concur.

2 That means we need to have ongoing
3 improvement in our understanding of the ecosystem
4 fuction and we should be attempting management in a way
5 which disrupts as little as possible natural ecosystem
6 functioning whereas we should -- I mean, in a
7 simplistic way, we should work with nature and not
8 against it.

9 Q. That's all nice, but Dr. Baskerville
10 calls that driving and looking out the review mirror.

11 MS. SWENARCHUK: Excuse me, but where
12 exactly has Dr. Baskerville said that what Dr.
13 Hutchinson just described constitutes what Mr. Hanna
14 has characterized it as?

15 MR. HANNA: He said it when he was here,
16 Madam Chair, as an expert before this panel.

17 THE WITNESS: I certainly don't remember
18 him asking me any questions. You've made that in
19 response to my answer to you, Mr. Hanna, so I think you
20 should withdraw it as quite inaccurate as what Dr.
21 Baskerville said about me.

22 MR. HANNA: Q. Dr. Hutchinson, you
23 described, if I understand it, that we should improve
24 our understanding and monitor how we are doing? That's
25 basically what I heard you say.

1 A. I find it very difficult to deal with
2 these questions, Mr. Hanna. You said -- yes. I will
3 tell you again what I said, that we should try and do
4 things in terms of management of our forest resources
5 which are in line with natural processes.

6 Q. Does management require forecasting?

7 A. Does management require forecasting?
8 I'm not an expert on management, but most management
9 does require forecasting.

10 Q. My question to you was: What
11 forecasting tools are you suggesting that this Board
12 should endorse as part of the timber management
13 planning process to deal with the types of concerns
14 that you have raised in terms of fire and clearcut
15 size?

16 MS. SWENARCHUK: Madam Chair, I really
17 think and I can sincerely suggest that Mr. Hanna might
18 find it more profitable to pursue that line of
19 questioning with the foresters who will be appearing,
20 particularly Mr. Benson.

21 Dr. Hutchinson was called here to testify
22 to ecological processess and their relationship to
23 silvicultural prescriptions presented this morning. He
24 has not been called or qualified as an expert in timber
25 management planning, and perhaps with regard to

1 predictive tools, Mr. Benson, and then perhaps
2 ultimately Mr. Smith who will be testifying and who has
3 written our witness statement No. 10 and will be
4 testifying to timber management planning, it might be
5 appropriate for them to answer those questions.

6 MR. HANNA: Well, Madam Chair, just one
7 comment. It's the first time I have heard that ecology
8 has been taken out of the realm of prediction
9 modelling. I thought that was a central element of
10 ecology. It certainly was when I took training from
11 Dr. Hutchinson.

12 Q. Is it your view that modelling is not
13 part of ecological processes, Dr. Hutchinson?

14 A. No, no, modelling is important to it.

15 Q. But you are not coming forward with
16 any specific proposals to this Board that deal with
17 timber harvesting impacts on ecological processes,
18 specific modelling forecasting tools?

19 A. No, I'm not coming forward with those
20 sorts of proposals.

21 Q. Are you coming forward with any
22 modelling or forecasting tools to deal with climate
23 change?

24 A. I've presented information on climate
25 change, some of which is based on modelling, but a lot

1 of the nutritional information in forests is based on
2 modelling, too.

3 Q. Listen to my question. I understand
4 that that is all part of that, but what I -- and I go
5 right back to the first statements I made when I had
6 started this cross-examination.

7 I am trying to see and extract from your
8 testimony what specific elements can be incorporated
9 into timber management planning planning process. One
10 of the elements that I could see that could come out of
11 your testimony would be, you come forward and say:
12 Look, here in Kimmons FORCYTE model, he has gone
13 through every nutrient relationship you can think of,
14 that's a great model, this Board should say every
15 forester in the province should use FORSYTE to analyse
16 nutrient impacts on all sites?

17 A. Kimmons himself doesn't say that.

18 Q. Fine. I wasn't suggesting that. I'm
19 asking you, have you got any proposals?

20 A. Well, if you ask a specific
21 question -- you know, if you want my opinion on the
22 FORCYTE model, I can give you my opinion on the FORCYTE
23 model.

24 Q. My question to you, Dr. Hutchinson,
25 is very simple. What forecasting tools are you putting

1 forward to this Board that should be used in timber
2 management planning to deal, first, with timber
3 harvesting?

4 A. Well, I'm suggesting that the
5 literature, including literature within Ontario,
6 suggest that there's problems with full-tree harvesting
7 from a nutritional point of view. That's one key
8 element of what I'm saying.

9 The concern has to do with sustainability
10 on nutritionally poor sites. It flows from that,
11 that's if you follow the logic and were accept it, then
12 it would be an unreasonable thing to continue to have
13 full-tree harvesting on nutritionally poor sites
14 without at least making provision for sustainability
15 subsequently.

16 Q. I understand your witness statement,
17 believe me, I have had read it. I understand you have
18 given a description of the scientific literature.

19 I'm asking about how to incorporate that
20 scientific information that you've brought forward in a
21 systematic way that can be used for management to
22 forecast the implications of management actions. Do
23 you have a specific proposal to make?

24 A. Yes, if I have some -- if I must,
25 some specific questions about them, I can deal with

1 them.

2 Q. Dr. Hutchinson, with the greatest
3 respect, I can't ask you specific questions because
4 there is nothing in your witness statement that talks
5 about it. Now, how can I ask you specific questions?

6 I have asked you the open-ended question,
7 tell me what it is, then we will talk about specifics?

8 A. Well, if we are interested in
9 establishing the fertility of sites, then I can make a
10 series of recommendation which might be helpful in
11 establishing how we do that.

12 Q. What forecasting tool are you
13 proposing?

14 A. For forecasting fertility?

15 Q. The implications on site nutrients
16 and forest growth associated with timber management.

17 A. Okay. I will assume the question is:
18 How would one go about establishing site nutritional
19 status and reserves for the future.

20 Q. No, the question was very simple.

21 A. It isn't simple. With due respect,
22 the questions you are asking are incredibly convoluted
23 and they're not simple.

24 Q. Well, the record stand as to whether
25 they are convluted or not, Dr. Hutchinson.

1 The question is: Are you coming forward
2 with any forecasting tool to deal with timber
3 management impacts on site nutrients?

4 A. Forecasting tools. I can certainly
5 provide some information on that, and if you want
6 answers to that I will be prepared to give them right
7 now.

8 Q. I haven't got much time and this is
9 the only chance I've got, so tell me what they are.

10 What are the models that we should -- or
11 forecasting tools that we should adopt in this province
12 to deal with the concerns you've raised in your witness
13 statement?

14 A. Now, that's a question that I can
15 probably tackle.

16 I have suggested that the forest
17 ecosystem classification system is a good basis.
18 That's one that's already been developed by the
19 Ministry of Natural Resources and I believe that once
20 it is calibrated against silvicultural practices and
21 nutritional status that you have a very good system of
22 going in and looking at site specific fertility of
23 sites.

24 There's several other ways that this
25 could be done and I think that they should be looked at

1 at the same time to test this out.

2 One of them would be to look at some of
3 the lower plants assemblages, that might be mosses and
4 lichens and things of that kind, and some of your
5 herbaceous species. So a little focus on the
6 herbaceous species, I think, would be very
7 constructive.

8 The sort of approach that Timmer has been
9 advocating of using folia nutrient status and
10 calibrating that against the first ecosystem
11 classification would be another brighter way to go.

12 There are some studies that Carlton and
13 his associates have carried out which indicates that
14 carbon/nitrogen ratios are a good way of looking at
15 soil fertility and site fertility and there are several
16 publications along those lines, Carlton and McClellan
17 and so on.

18 Q. Dr. Hutchinson, how do you see,
19 using, for example, Timmer's folia nutrient status
20 analysis to predict the impacts of alternate
21 silvicultural prescriptions on a site?

22 A. Well, if you use that, calibrate it
23 against the forest ecosystem classification, you can
24 probably establish site fertility, at least you could
25 categorize into nutritionally poor sites and so on.

1 The silvicultural practices that you
2 might want to put into effect would be based on the
3 fertility of the sites. So, for example, at the risk
4 of being repetitive, if you have nutritionally poor
5 sites, unless you have some guarantee that you can
6 achieve adequate growth in the same sort of rotation,
7 then you wouldn't go to full-tree harvesting.

8 Q. Dr. Hutchinson, what you have
9 described with FECS and Timmer and carbon nitrogen
10 ratios are ways to classify sites into good, medium and
11 low fertility. Is that a fair statement?

12 A. That's right.

13 Q. That's classifying a site?

14 A. Mm-hmm.

15 Q. I'm saying, predicting the impact of
16 alternate silvicultural prescriptions. Are you
17 suggesting that we should classify these sites in one
18 of these ways and then, on the basis of that, prescribe
19 across the area of the province, the area of the
20 undertaking acceptable silvicultural techniques on that
21 basis?

22 A. That's what we are attempting to do
23 at the moment.

24 Q. When you say "we"...

25 A. Well, the Ministry of Natural

1 Resources. In fact, that's one of the reasons I
2 understand this forest ecosystem classification is
3 being developed.

4 Q. So the concerns that you raised in
5 your witness statement are already being dealt with by
6 the Ministry?

7 A. No, because I haven't reached the
8 stage when this can be applied. It hasn't been
9 calibrated yet against some of these things that --
10 some of these other components.

11 Q. Well, what do we do in the interim?

12 A. What do we do in the interim?

13 Q. Yes.

14 A. Well, we press ahead and get that
15 calibrated and we have another -- and we make sure that
16 this is done on a site-specific basis. It's not done
17 on a site-specific basis at the moment.

18 Q. That's the nub of what I'm trying to
19 get at. Do you not need in those site-specific cases a
20 predictive, a forecasting tool to look at those
21 variations and nutrient status on tree growth and other
22 non-timber values and, on that basis, try to come to
23 some conclusion as to what are appropriate
24 silvicultural prescriptions for the area in question?

25 A. Well, there is -- I think it's

1 important that we get some -- well, you said involved
2 in some of this assessment. I mean, we are talking
3 about using experience as well.

4 Q. What predictive, quantitative,
5 analytical tools are you endorsing to deal with the
6 ecological impacts of climate change?

7 A. Can you just run that one past me
8 again?

9 Q. What predictive, analytical tools,
10 forecasting tools are you endorsing and recommend this
11 Board should endorse to deal with the ecological
12 impacts of climate change?

13 A. I think it's very important that we
14 keep yourselves very well informed on climate change
15 research that's going on. That seems to disturb you.

16 Q. I wanted a very simple thing. Have
17 you got a specific forecasting tool that can be used by
18 forest managers in this province to deal with your
19 concerns on climate change and their effects on timber
20 management -- timber production?

21 A. Let me make it clear, Mr. Hanna, that
22 my concerns are very widespread concerns about climate
23 change. This is not just a whim that I thought I would
24 drop in and mention we might have climate change. It's
25 a very pressing issue and I think most people here are

1 concerned about it.

2 Now --

3 Q. Let me just tell you something, Dr.

4 Hutchinson, I am concerned about climate --

5 MS. SWENARCHUK: Let him finish his
6 answer, please.

7 MR. HANNA: Ms. Swenarchuk, I have a
8 limited amount of time here, can I please -- I did not
9 interrupt him to stop the question. I am going to let
10 him continue to give the answer, I am trying to get his
11 answer as focused as I can.

12 MS. SWENARCHUK: Madam Chair, the witness
13 is entitled to give a complete answer to the question.

14 MADAM CHAIR: Let Dr. Hutchinson finish
15 his answer, Mr. Hanna.

16 And the Board would point out that we
17 haven't been impressed with the behaviour of either Mr.
18 Hanna or Ms. Swenarchuk today. I don't think either of
19 you have attempted to facilitate this afternoon's
20 business very quickly. So I think if we keep the
21 number of objections down--

22 MS. SWENARCHUK: I'm not trying to do
23 that, Madam Chair.

24 MADAM CHAIR: --and, Mr. Hanna, if you
25 can cut the theatricals out just pose your questions

1 and let the witness answer.

2 Go ahead, Dr. Hutchinson. Do you have
3 something else, Dr. Hutchinson, to add to your comment?

4 THE WITNESS: Yes. If in a situation in
5 which the climate is probably going to change rather
6 rapidly, the first thing, irritating as this may be,
7 Mr. Hanna, is to educate ourselves in this aspect
8 and --

9 MR. HANNA: Madam Chair, I hate to
10 interrupt and I have a limited amount of time here.
11 This witness is not answering my question in any way
12 whatsoever. My question was a very simple question.

13 My question was: What predictive,
14 analytical tools is he coming forward to deal with
15 climate change. Not whether it's an important issue,
16 not whether or not we should take consideration of it
17 or whatever, a simple question.

18 Now, this witness is not answering that
19 question and I have a right to answer that question and
20 to have it focused, not to have a question that -- an
21 answer that rambles all over the country side.

22 MADAM CHAIR: Mr. Hanna --

23 THE WITNESS: All right. Then I will
24 answer your question very simply.

25 MADAM CHAIR: Excuse me, Dr. Hutchinson.

1 You can answer the question simply. It may not be
2 helpful to Mr. Hanna, but go ahead.

3 THE WITNESS: Right. Well, it seems
4 important that we use global circulation models. They
5 have access to all of these in Atmospheric Environment
6 Service, Downsview. There is a climate change centre
7 there which is plugged into the Canadian Forest
8 Service, it's plugged into Agriculture Canada and I'm
9 sure it's plugged into the Ministry of Natural
10 Resources and Ministry of the Environment. So the flow
11 of information from there will be something that we
12 should pay great attention to.

13 Now, how we actually deal with climate
14 change in terms of forest planning, you don't expect to
15 me to sit here and give you just, you know, snap
16 answers to that. There's committees across the country
17 trying do deal with deal that incredibly complicated
18 issue.

19 Q. Dr. Hutchinson, as you know, there
20 are decisions being made every day by forest managers
21 in this province and by other informed people in terms
22 of appropriate management tactics and activities on the
23 ground.

24 We can have all those committees sitting
25 there and all the rest going on to improve the

1 understanding, the education, all those good things,
2 and I can tell you my client has no problem with that.

3 What I am trying to deal with is, what do
4 we do at an operational level? That man out there in
5 the bush who is sitting there trying -- or that woman
6 out there in the bush who is trying to decide: Do I
7 cut that tree or that tree, do I plant here or do I
8 plant there and or what do I plant, and I am asking you
9 what analytical tools, what forecasting tool should
10 they use to assist them in their decisions?

11 If you don't have one, that's fine.

12 A. Well, there has to be some management
13 thought given to what sorts of nursery stock we're
14 developing for the future. I mean, we have got to
15 assure ourselves that what's going to be planted is
16 going to be successfully harvested down the road.

17 Q. Dr. Hutchinson, all thought is is a
18 forecasting exercise.

19 A. All which is? I'm sorry, I didn't
20 hear you.

21 Q. All thought is is a forecasting
22 exercise. It may be implicit rather than explicit, but
23 that's all it is. You are saying, we have got to give
24 consideration to the nursery stock and make sure it is
25 going to be appropriate 50 years down the road. No

1 question.

2 How do we functionally predict it? How
3 do we deal with it on the ground?

4 A. How do we deal with it on the ground?
5 Well, I don't think the gang that is actually planting
6 the trees are in any position to deal with the sorts of
7 questions you are posing there.

8 I mean, we are talking about management
9 decisions and informed management.

10 Q. Forest managers don't plant the
11 trees, Dr. Hutchinson, they make the decisions and I'm
12 talking about the forest managers.

13 What should the man, the woman, out in
14 Ignace District, whatever FMU, who is sitting there
15 looking at his next five year plan, how should he
16 incorporate global climate change in his prescriptions?

17 A. Quite frankly, I think he is going to
18 have to wait until he gets information from some other
19 sources.

20 Q. What predictive, quantitative,
21 analytical tools, forecasting tools are you
22 recommending that this Board should endorse to deal
23 with the ecological impacts of air pollution?

24 MADAM CHAIR: Mr. Hanna, I would just
25 interrupt here. You are presuming that the Board is

1 interested in predictive, whatever, whatever tools and
2 models. Let's make sure that Dr. Hutchinson knows this
3 is your client's position. The Board has not said that
4 this decision will depend on the availability of
5 predictive, quantitative tools.

6 MR. HANNA: I understand that, Madam
7 Chair.

8 MADAM CHAIR: I think Dr. Hutchinson
9 should be very aware that this is a position that you
10 have held dear to your clients case in the two and half
11 years this hearing has been on.

12 MR. HANNA: I appreciate that, Madam
13 Chair, but this witness has also said that he feels
14 that it is an essential element of management to
15 forecast the implications of your activities and we
16 have, I think, already arrived at common ground there.

17 MADAM CHAIR: I just wanted to make sure
18 that Dr. Hutchinson was aware it is not essential
19 necessarily to the Board's decision.

20 MR. HANNA: I appreciate your
21 clarification.

22 Q. Can you answer the question now, Dr.
23 Hutchinson.

24 A. Air pollution, what should we do
25 about it in terms of forest management?

1 Q. No. My question is a very simple
2 question. It is the same one I've asked to other
3 matter.

4 What forecasting tools are you bringing
5 forward and suggesting that we should use in timber
6 management planning to deal with air pollution impacts?
7 Again, I'm talking about that forest manager, the guy
8 who is making or the woman that's making a decision on
9 a day-to-day basis?

10 A. Create some trial set-up to sort out
11 jack pine sensitivity to ozone. When those trials are
12 concluded, we might think of incorporating some of the
13 stock, the more tolerant ones into our planting regimes
14 provided we have got a lot of other things running.

15 Q. So until we get those answers there
16 is nothing we can do?

17 MR. MARTEL: Can I ask a question. The
18 forest manager in these last series of topics, the guy
19 out in the field, he is not going to be making the
20 decisions with respect to those sort of things.

21 THE WITNESS: No.

22 MR. MARTEL: If they are going to come
23 from anywhere it will be from upper management.

24 THE WITNESS: I agree, Mr. Martel.
25 That's what I was trying to convey, that these

1 decisions on these questions would have to come from
2 above. A forest manager really is not in any position
3 do deal with them directly.

4 MR. HANNA: Q. All right. Let's take it
5 a step back then. Let's go up the scale to wherever
6 the appropriate place is in the management system
7 that's going to be used to provide those directions to
8 the man in the field, and what predictive, quantitative
9 forecasting tools should upper management use to
10 provide direction to the women and men in the field who
11 are implementing their directions, dealing first with
12 air pollution?

13 A. How do they deal with air pollution?
14 Well, I've suggested that in the case of jack pine,
15 since it is a sensitive species, we need to see -- and
16 the probability of ozone impacts is increasing, we need
17 to probably do some progeny testing.

18 Q. So until the results of the progeny
19 testing, the field monitoring studies. What other
20 things did you feel -- the research that's necessary to
21 shed more light on this, we basically have to wait and
22 see.

23 A. We should also find out, for the
24 boreal forest, the levels of ozone that have currently
25 occurred, we could then identify the areas of greatest

1 concern is in the boreal.

2 Q. My question was: Do we wait and see
3 until we get those results?

4 A. You don't have any choice.

5 Q. Is that also true with acid rain?

6 A. Is it true that we don't have any
7 choice?

8 Q. That we don't have anything, we have
9 to wait and see?

10 A. I think we are already in a position
11 to make some statements about acid rain.

12 Q. What forecasting tool are you
13 suggesting should be used to predict the ecological
14 impact of acid rain on timber -- on timber growth in
15 the forest ecosystem as part of the timber management
16 planning process of this province?

17 A. Right. Well, clearcutting, most
18 especially full-tree harvesting, leads to
19 acidification. The necessity to protect watersheds is
20 quite an important issue. Aside from increasing the
21 probability of future poor growth, it's likely to lead
22 to water degradation and lake acidification and so on.

23 Q. I didn't hear once there, Dr.
24 Hutchinson, a suggestion of a formal forecasting tool
25 that should be used. That's all I wanted. Is there

1 one or is there not?

2 You have told me what the implications
3 are. How do we forecast them on a case-by-case basis?

4 A. Okay.

5 Q. How do we use them in a management
6 sense?

7 A. Soil sensitivity would be one way to
8 look at that.

9 Q. We are back to classification again.

10 A. Is there an objection to being back
11 to classification?

12 Q. Classification is fine, but I have to
13 take classification and say: With this class of site,
14 this is what -- these are the activities that are
15 acceptable. To determine what activities are
16 acceptable, I have to make some forecast of what the
17 implications of those activities are; is that not
18 right?

19 A. We can make those predictions right
20 now.

21 Q. Good. How? What is it that we
22 should use?

23 A. We should find soil sensitivity
24 classifications.

25 Q. Now we have got a soil

1 classification -- excuse me, a soil acidity or
2 acidification sensitivity system. We haven't got one
3 right now that's been applied across the area of the
4 undertaking; have we?

5 A. No.

6 Q. Okay. So we've got to do that?

7 A. Mm-hmm.

8 Q. Once we have done that, then how do
9 we forecast the implications of alternate activities,
10 timber management activities?

11 A. Well, from that, let's suppose that
12 we instantly have a soil classification system in place
13 and there already is some substantial progress in this,
14 we can then superimpose that on that the present levels
15 of, if you like, precipitation, chemistry and we can
16 make predictions from that as to how long we might have
17 the certain levels of soil acidification to occur.

18 So we can superimpose current inputs
19 against sensitivity, and then we'd have to look at
20 that -- once we've establish that, we've established
21 that these are the most sensitive areas or the most
22 sensitive sites and we might need to change management
23 practices in terms of what is planted there and how it
24 is looked after.

25 Q. Do you agree that that should be

1 done?

2 A. I think it should be done, yes.

3 Q. Can we move now to the section of
4 your report that deals with hydrology and water
5 quality.

6 A. Right.

7 Q. It starts on page 22. Now, before I
8 go into this line of questioning, are you an expert in
9 hydrological impacts, water quality impacts and their
10 associated effects?

11 A. I have expertise in water chemistry,
12 watershed studies.

13 Q. I just want to make sure we aren't in
14 a blind alley.

15 A. We will only find that out in time,
16 but I hope we're not.

17 Q. Now, in reading this section of your
18 report, I concluded that it was your view the impacts
19 of water quality and quantity depends on the extent of
20 disturbance in a watershed; is that correct?

21 A. That would be generally true, yes.

22 Q. And in order to assess the potential
23 impacts of alternate harvesting and silvicultural
24 treatments one would want to undertake a watershed
25 level analysis; is that fair?

1 A. Well, some predictions can be made in
2 advance of doing that because of the work that's
3 already gone on.

4 Q. In advance of what?

5 A. In advance of -- I don't think it's
6 necessary to do -- constantly repeat watershed analyses
7 for every site. I don't think that's necessary.

8 Q. Okay. And how would you predict the
9 impacts on a case-by-case basis?

10 A. Well, you would want to know all
11 kinds of features of the site, vegetational stands,
12 stand history, soil type, depth, texture, slope,
13 bedrock chemistry, things of this kind.

14 Q. Now, what would you do with all that
15 data?

16 A. You would examine that in
17 relationship to other studies that have been done and
18 you can also, incidentally, of course, model this and
19 make some predictions as to what's likely to be the
20 outcome of different practices.

21 Q. Dr. Hutchinson, I am going to read
22 the question again because I don't think you heard the
23 question.

24 In order to assess the potential impacts
25 of alternate harvesting and silvicultural treatments

1 one would undertake a watershed level analysis. Is
2 that a fair statement?

3 A. Okay.

4 Q. Isn't that what you just described to
5 me in terms of bedrock, vegetation, all those sort of
6 things?

7 A. Well, yes. Okay.

8 Q. And you want to do that in a
9 watershed level?

10 A. Right.

11 Q. Have you read Exhibit 812 which is
12 entitled Is Cumulative Watershed Effects Analysis
13 Coming of Age?

14 A. Who's it by?

15 Q. John Colborne.

16 A. John Colborne. No, I don't think I
17 have. That's the key reference in this field; is it?

18 Q. You're the expert, Dr. Hutchinson,
19 not me.

20 Are you familiar with the procedure used
21 by the U.S. forest service to analytically deal with
22 cumulative watershed effects of the type that you have
23 described in your witness statement?

24 A. Yes, I think so.

25 Q. You are?

1 A. Yes.

2 Q. Have you used the REN model?

3 A. No.

4 Q. Are you familiar with the REN model?

5 A. No.

6 Q. Isn't that the procedure that the
7 U.S. Forest Service uses?

8 A. I don't know. I don't know actually.

9 Q. What is the procedure that you say
10 you are familiar with?

11 A. Well, I'm familiar with the ways in
12 which they have gone -- the U.S. Forest Services has
13 gone about looking at watersheds; that is, to use weirs
14 and to develop mass balances.

15 Now, if the REN model is --

16 Q. The question was, Dr. Hutchinson:
17 Are you familiar with the procedure used by the U.S.
18 Forest Service to deal and predict cumulative effects,
19 cumulative watershed effects of timber management, not
20 monitor them, but forecast them, predict them?

21 A. If you are saying if I'm familiar
22 with that model, no.

23 Q. Are you bringing forward to this
24 Board a forecasting tool or other type of predictive
25 procedure that should be used to deal with the types of

1 effects that you have listed on page 22 of your witness
2 statement?

3 A. I'm not coming forward to this Board
4 to do that, no.

5 Q. What is the Board supposed to take
6 from that portion of your witness statement under the
7 title Changes and Site Hydrology Following
8 Clearcutting?

9 A. The Board should take that certain
10 changes very generally follow different cutting
11 practices and that these include affects on water flow,
12 volume and on erosional aspects and on nutritional
13 aspects.

14 Q. Do you see that influencing their
15 decision in any way whatsoever?

16 A. Yes, I think it pertains to site
17 fertility and site nutritional status in terms of
18 sustainability.

19 Q. And how should that be dealt with in
20 the timber management planning process?

21 A. How should it be dealt with in the..
22 timber management planning process? Well, maybe we
23 should get over this U.S. Forest Service model and see
24 if it's appropriate.

25 Q. Can we deal with the matter of site

1 nutrients. Is it your view that the material reference
2 in your report comprises an up-to-date and
3 comprehensive review of the relevant scientific
4 literature on the subject?

5 A. Is it up to date? Yes, it's up to
6 date. Is it comprehensive? Well, I'm sure there's lot
7 of papers not mentioned in there.

8 Q. Are there any major Canadian papers
9 that deal specifically with this issue that you haven't
10 addressed?

11 A. Well, this would be a matter of
12 opinion.

13 Q. You don't know any of, though?

14 A. If I felt they were major papers I
15 would have put them in there.

16 Q. Okay. Are you familiar with the
17 paper by Hendrickson et al 1989 in the Canadian
18 Journal of Forest Research dealing specifically with
19 whole-tree harvesting?

20 A. That's a Canadian paper?

21 Q. Yes.

22 A. Hendrickson?

23 Q. Yes.

24 A. No, I don't think I know that.

25 Could I have the title of that possibly, Mr. Hanna,

1 that would be nice?

2 Q. Because you asked, Dr. Hutchinson, I
3 will be happy to give you the title. Nutrient Cycling
4 Following Whole-Tree and Conventional Harvest in
5 Northern Mixed Forests undertaken by three scientists
6 from the Petawawa National Forest Institute, published
7 in --

8 A. Okay, thank you.

9 A. --1989.

10 Q. '89, right. You are not familiar
11 with that paper?

12 A. I don't think so, no. I would have
13 to have a look at it to be able to establish that for
14 sure.

15 Q. Well, have a look at it. (handed)

16 A. Thank you. No, I don't think so.

17 MR. HANNA: It looks like I will finish
18 by four, Madam Chair, as if I had a choice.

19 Q. Back to this matter of forecasting,
20 Dr. Hutchinson. In terms of site nutrients, is there a
21 forecasting tool that you see would incorporate the
22 types of concerns that you have addressed in your
23 witness statement?

24 A. There's some several computer model
25 simulations which would point in that direction, yes.

1 Q. Are there any that you would prefer
2 over another? Are any of them sufficiently -- are
3 there any that you'd refer over another?

4 A. Well, in the Canadian context, the
5 one that's been tried the most would be the FORCYTE
6 model.

7 Q. Do you feel the use of the FORCYTE
8 model in timber management planning would be useful to
9 deal with the types of concerns that you raised for
10 Ontario?

11 A. Yes.

12 Q. In what way would you see that tool
13 being used? By whom and in what way?

14 A. Well, it's a fairly robust model
15 which looks at many aspects of forest ecology and deals
16 with the nutritional aspects, it deals with hydrology,
17 it deals with aspects of cutting and the consequences
18 of that in a nutritional way.

19 Q. Who would be using it and in what way
20 in the timber management planning process? How would
21 you see it best used?

22 A. Well, it probably could be used at
23 the -- it could be used at several levels, certainly
24 the district level.

25 Q. Are you suggesting that that is a

1 reasonable exercise to go through in preparation of the
2 timber management plan, in your view?

3 A. It's an aid to it, yes. I don't
4 think that the author of that claims any more than that
5 it's -- you know, it has had a lot of work done on that
6 particular model.

7 Q. Just so you understand, Dr.
8 Hutchinson, I am not in any way suggesting that FORCYTE
9 or any other forecasting tool becomes the
10 decision-making tool.

11 A. No.

12 Q. Simply as an assist to decision
13 making. Just so we both understand that.

14 A. I think that would be --

15 Q. It would be of useful assistance.

16 A. That would be one of the ones we
17 would be looking at.

18 Q. Is there any better tool that you are
19 aware of?

20 A. Well, any better model?

21 Q. Forecasting tool, of that nature,
22 yes.

23 A. No.

24 Q. Now, if we had a FORCYTE type of
25 forecasting tool in place in the districts that forest

1 managers had access to, do you need to define high,
2 medium and low fertility sites, or do you really need
3 to provide certain key inputs into the model?

4 Some of them might be done -- might be
5 generated from site indicators such as lower flora,
6 indicator species, whatever it is, that we might have,
7 FECs, but the analysis would revolve around what the
8 implications were in terms of forest growth rather than
9 in terms of some standard for a specific site class?

10 A. Well, what you are going to get out
11 of that model is -- well, as you said, there will be
12 more things necessary to make decisions than you would
13 get out of that model.

14 It would be useful in terms of predicting
15 stand productivity, and if that was the sole purpose of
16 asking those questions, that would be an appropriate
17 way to go.

18 Q. The other things that you are
19 thinking of...?

20 A. Well, it wouldn't necessarily tell
21 you anything about the -- you know, you'd have to make
22 decisions on cutting practices and silvicultural
23 prescriptions and things of this kind.

24 Q. Does not the FORCYTE model have built
25 into it a whole routine dealing with silvicultural

1 practices and their implications?

2 A. Yes, it does.

3 Q. Then I'm at loss, I don't understand.

4 There is a discontinuity there I don't follow.

5 A. Well, you can set it, you can ask
6 certain questions of it and it will you tell about
7 productivity in the future.

8 Q. Yes?

9 A. At whatever stage along and for
10 rotations going off into the future, it would make
11 predictions of that type.

12 Q. Yes?

13 A. But in terms of my own witness
14 statement, it would have difficulty incorporating into
15 it some of the concerns that on-the-spot managers might
16 have and it would have difficulty incorporating into it
17 things like air pollution, climate change, some of
18 these other variables that you have been mentioning.

19 Q. Okay. Well, I was limiting myself to
20 site nutrients, but, okay, I hear what you are saying.

21 A. In site nutrients, I think it would
22 be pretty good.

23 Q. Would you agree with me then that if
24 we had that type of a tool, the need to classify sites
25 and the other things we've talked about becomes less

1 demanding because then we have the ability to forecast
2 and to look what the implications are, and on that
3 basis determine what's acceptable and what's not
4 acceptable?

5 A. No, because you've got to input some
6 information in the model to start with.

7 Q. I understand that, I don't disagree
8 with that. My point was, though, in terms of
9 determining acceptability of practices, then you aren't
10 straightjacketed in terms of what is acceptable and
11 what isn't acceptable, you can look at a range of
12 alternatives and select the one that's most appropriate
13 for the site?

14 A. Depending on your objectives, yes.

15 MR. MARTEL: Could I ask a question. How
16 extensive is this system because we have heard a good
17 deal about habitat supply analysis, we've heard a good
18 deal about other systems, we've seen them recently in
19 Timmins?

20 You can throw a ton of money, we are
21 told, at them, but it is in fact not going to speed the
22 process up of developing, that bringing it into use in
23 Ontario. It is going to get there, but buckets full of
24 money aren't going to get it there any quicker.

25 Is that the same in this type of model?

1 THE WITNESS: This is one of the -- I'm
2 certainly not an expert on FORCYTE, I should make that
3 clear.

4 This is one of those that's been tested
5 probably most widely and developed with a great deal of
6 care, so it has a great information base behind it. In
7 fact, it's used -- it's a fairly robust model, so it
8 could be used for forest systems across Canada and it's
9 even being used for tropical forest systems.

10 Now, I'm sure the developer of it would
11 say that the further you get away from the initial
12 development processes in terms of geography and so on
13 the less reliable it might be, and in terms of forest
14 practices and things.

15 MR. HANNA: Q. But is it any less
16 reliable than any other tool that we have available,
17 including implicit forecasts that we might make in our
18 mind?

19 A. It's very dangerous for me to come in
20 and endorse the FORCYTE model. I'm just saying, my
21 impression and my discussions with colleagues and so on
22 is that the FORCYTE model is perhaps the best that we
23 have available in Canada, maybe one of the best in
24 North America.

25 Q. Dr. Hutchison, did you prepare the

1 interrogatory responses for your witness statement?

2 A. Yes, most of them, except for the
3 terms and conditions.

4 Q. I would like to look at a statement
5 you make on page 3 of your report where you state:

6 "The problem of competition from hardwood
7 species on cut-over black spruce and jack
8 pine sites seem to be, at least in part,
9 a function of harvest practice."

10 Now, you were given an interrogatory,
11 question 1, by the OFAH dealing with this matter and
12 you indicated:

13 The harvest practices that you are
14 referring to here are, for example,
15 full-tree removal methods.

16 Can you explain to me how full-tree
17 removal methods relate to the problem of competition
18 from hardwood species?

19 A. Well, the problem of competition from
20 hardwood species is that you've left in the ground
21 living root material and shoots and so on from which
22 new plants can rapidly spring, and that you also have
23 access to open areas for small seeds to come in from
24 some of these species too.

25 The more disturbance you have on the

1 site, the more open areas you have access to for this
2 sort of thing. It's really -- it's a function actually
3 of harvesting of -- of harvesting okay, period. On a
4 scale of what tends to happen, full-tree harvesting
5 would be done at the top of that scale. We're not
6 clear of this problem with conventional harvesting.

7 Q. Are you familiar with a thesis put
8 forward that full-tree harvesting may in fact reduce
9 competition from hardwood species on clearcuts because
10 of the fact that nitrogen often is the limiting factor
11 for broad-leaf species, that by full-tree harvesting
12 you actually remove more nitrogen of the site and,
13 therefore, reduce competition?

14 A. No, I haven't come across that
15 argument.

16 Q. Does the argument have any merit?

17 A. Well, it may under certain -- it may
18 on particular sites. I don't know, Mr. Hanna, but the
19 observation, the general field observation is that on
20 many of the full-tree harvested sites over the last ten
21 years or so that this competition problem -- it goes
22 back beyond that with conventional harvesting, but it
23 hasn't been particularly mitigated.

24 So I mean, my conclusion from that is
25 that full-tree harvesting isn't solving the competition

1 problem.

2 Q. I would like to deal with one last
3 point then, Dr. Hutchinson, and that's also on page 3
4 of your witness statement. You state in the last
5 paragraph on page 3:

6 "The room for errors in management
7 leading to site degradation is very large
8 and the added costs of a more informed
9 system surely more than balance out if a
10 longer term view is taken."

11 Now, what added costs are you referring
12 to there?

13 A. Well, the added costs would relate to
14 reduced yields perhaps in the --

15 Q. The added costs of a more informed
16 system?

17 A. No, the added -- okay. The added
18 costs of a more informed system means we are going to
19 have to do more site specific, if you like,
20 investigation.

21 Q. Do you have any estimate of what
22 these added costs are?

23 A. No, these are dealt with, I think, in
24 Panel 5 that's upcoming.

25 MS. SWENARCHUK: Seven?

1 THE WITNESS: Seven, I'm sorry.

2 MR. HANNA: Q. You continue on there
3 saying:

4 "...surely more than balance out if a
5 longer term view is taken."

6 A. Correct.

7 Q. What do you mean by a longer term
8 view?

9 A. Several forest rotations.

10 Q. Do you feel that it is responsible
11 to, when one is forecasting and analysing the impacts
12 of timber management, to look at least a rotation, in
13 some cases two or three rotations into the future?

14 A. Do I think it's responsible?

15 Q. Yes.

16 A. I think it is very important to do
17 that.

18 Q. And that applies both to implications
19 for timber and non-timber values?

20 A. Yes.

21 MR. HANNA: Dr. Hutchinson, thank you.

22 Madam Chair, those are my questions.

23 MADAM CHAIR: Thank you, Mr. Hanna.

24 Mr. Hanna, I think the Board has to tell
25 you that this afternoon we didn't find the

1 cross-examination very useful. There may be all kinds
2 of reasons why that's the case, but we would certainly
3 urge you the next time you appear before the Board to
4 very much focus your questions on specific matters and
5 keep the questions very simple, please.

6 Also, Ms. Swenarchuk, we are going to
7 have a long cross-examination for each panel in your
8 case if you hop to your feet every five minutes, and
9 also the parties. I think we have heard from Mr.
10 Cassidy and Mr. Freidin that you are going to spend a
11 lot of time raising objections to lots of things and
12 the Board simply won't put up with that.

13 We are going to get through this evidence
14 as quickly as we can and I know it's the first panel of
15 the first intervenor in opposition and it will take us
16 a while to sort out exactly how this process will move
17 ahead, but it will move ahead and quickly.

18 MS. SWENARCHUK: Madam Chair.

19 MADAM CHAIR: Do you an objection, Ms.
20 Swenarchuk?

21 MS. SWENARCHUK: No. Please allow me the
22 opportunity to respond.

23 The absolute priority of Forests for
24 Tomorrow is to move the evidence ahead as quickly as
25 possible. It is not my practice to intervene at all,

1 if possible, in another parties' cross-examination. I
2 am of the view that counsel bring to any judicial
3 proceeding witnesses who present evidence and then
4 answer questions in cross-examination.

5 My particular concern today was the fact
6 that Mr. Hanna for whatever reasons, and I shan't go
7 into that, was not present for the direction
8 examination and a particular concern about that factor
9 leading to additional time being spent.

10 I have an obligation to my client to make
11 those reasonable interventions which, in my
12 professional view, my client EPA case requires. Our
13 priority, as I say, is to move the case along. I
14 certainly hope and intend to make absolutely no more
15 interventions than I think I am absolutely obliged to
16 do.

17 MADAM CHAIR: Thank you, Ms. Swenarchuk.
18 Perhaps that clears it up because the Board heard what
19 sounded like sniping and arguments going on that
20 weren't particularly helpful this afternoon, and we are
21 just telling the parties we just won't listen to that.

22 MS. SWENARCHUK: I appreciate that
23 completely, Madam Chair.

24 MADAM CHAIR: All right.

25 MR. FREIDIN: Madam Chair?

1 MADAM CHAIR: Mr. Freidin.

2 MR. FREIDIN: Just two matters. Just a
3 check from Mr. Cassidy and Ms. Seaborn whether they
4 will take up all of Thursday so that I can assume I
5 won't be reached until Monday.

6 MADAM CHAIR: Mr. Cassidy?

7 MR. CASTRILLI: Well, as I have advised
8 Ms. Seaborn, it may be possible for me, if we start at
9 nine on Thursday, which I am anticipating we will do,
10 to finish before the day's end.

11 As a result, I have advised Ms. Seaborn
12 that she should be prepared and she has indicated, as
13 usual, she will be prepared to do that, so we won't
14 have any loss time if I finish before or earlier than I
15 had originally stated which is my hope.

16 MADAM CHAIR: Ms. Seaborn?

17 MS. SEABORN: Madam Chair, I've provided
18 to Mr. Pascoe and the other parties a list of the
19 exhibits I intend to refer to.

20 At the moment I expect to be an hour and
21 a half in cross-examination. That time may fluctuate
22 somewhat depending on what areas Mr. Cassidy covers.
23 However, if I am reached midway through the day I would
24 hope to finish on Thursday.

25 MADAM CHAIR: Has Ms. Swenarchuk been

1 given any information that Dr. Hutchinson might need to
2 prepare for your cross-examination?

3 MR. CASTRILLI: I am in the process of
4 giving that -- well, I am going to give it to her as
5 soon as we adjourn for the day. I have a couple of
6 articles and some transcript volumes that she should
7 look at. I have already passed this on to Mr. Pascoe..

8 MS. SEABORN: I have provided an exhibit
9 list this morning to Ms. Swenarchuk.

10 MADAM CHAIR: Mr. Freidin, you won't be
11 reached on Thursday.

12 MR. FREIDIN: It doesn't sound like I am
13 going to be reached on Thursday.

14 The other matter that I am just wondering
15 whether -- on the basis that this is the first panel,
16 whether the witness can be given the usual direction
17 regarding refraining from speaking to anyone about his
18 evidence during his cross-examination or until his
19 reply evidence is completed.

20 MADAM CHAIR: Yes. I am sure Ms.
21 Swenarchuk has made you familiar with those rules, Dr.
22 Hutchinson.

23 THE WITNESS: Right. I eat alone
24 apparently.

25 MS. SEABORN: Madam Chair, if I could

1 just take the opportunity before we adjourn. An
2 undertaking was given by the Ministry of the
3 Environment during the satellite hearing in Timmins on
4 September 11th, 1990 and I would like to file a letter
5 that has gone to a Mr. Alan Quinn.

6 You may recall, Madam Chair, that Mr. and
7 Mrs. Quinn presented a submission to the Board in
8 Timmins. They had a concern about a logging road with
9 respect --

10 MADAM CHAIR: Is this the school bus
11 issue?

12 MS. SEABORN: Yes, the school bus issue.
13 The director of the Environmental Assessment Branch has
14 sent a letter off to the Quinns that's dated September
15 26th, 1990. It is a letter to Mr. Alan Quinn from
16 Derrick Doyal and it is two pages.

17 MADAM CHAIR: Do you want this to be an
18 exhibit, Ms. Seaborn.

19 MS. SEABORN: Yes, because it is a
20 response to an undertaking.

21 MADAM CHAIR: This is Exhibit 1417 and it
22 is a one-page letter with a distribution list from the
23 Director of the EA Branch to Mr. Quinn in response to a
24 question raised during the committees satellite hearing
25 in Timmins.

---EXHIBIT NO. 1417: One-page letter with a distribution list from the Director of the EA Branch to Mr. Quinn in response to a question raised during the Board's satellite hearing in Timmins.

MS. SEABORN: I was advised, Madam Chair, by Ms. Harvie that at the satellite hearing she undertook to provide the Board with a copy of the response that would be going to Mr. Quinn in relation to his designation request.

MADAM CHAIR: Thank you.

We will begin again at 9 a.m. on Thursday. Thank you.

---Whereupon the hearing was adjourned at 4:10 p.m., to be reconvened Thursday, October 11, 1990 commencing at 9:00 a.m.

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